RCRA FACILITY ASSESSMENT

ChemSyn Science Laboratories
Eagle-Picher Technologies, LLC
Lenexa, Kansas

EPA I.D. No. KSD980966501

June 15, 1999

Bureau of Waste Management

Kansas Department of Health and Environment

KANSAS
DEPARTMENT OF HEALTH AND ENVIRONMENT
BILL GRAVES, GOVERNOR
Clyde D. Graeber, Secretary

June 16, 1999

JUN 21 1999

ROAD

Ms. Gayle Hubert
EPA Region 7
RCRA Corrective Action and Permit Branch
726 Minnesota Avenue
Kansas City, Kansas 66101

RE: RCRA Facility Assessment
ChemSyn Science Laboratories
EPA ID #KSD980966501

Dear Ms. Hubert:

The Kansas Department of Health and Environment (KDHE) has completed the final revision of the RCRA Facility Assessment for the ChemSyn Science Laboratories. KDHE has incorporated comments submitted by the facility into this final RFA. According to Bill Lowe, EPA had no comments on this RFA. Enclosed is a copy of the final RFA.

KDHE appreciates your cooperation and assistance in this process. Please submit any additional comments or questions regarding this RFA to KDHE within 30 days. You may contact me via e-mail at kbartlet@kdhe.state.ks.us or phone at (785) 296-6561.

Sincerely,

Katherine Bartlett

Katherine Bartlett
Environmental Scientist
Hazardous Waste Facilities Unit
Permits Section

Enclosure - RCRA Facility Assessment, ChemSyn Science Laboratories

cc: Julie Coleman - DEA/NEDO/Waste Program (w/enclosure)
Clinton Gregg - ChemSyn Science Laboratories (w/o enclosure)

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EXECUTIVE SUMMARY

The U. S. Environmental Protection Agency (EPA), Region 7, requested that the Kansas Department of Health and Environment (KDHE) complete a Resource Conservation and Recovery Act (RCRA) Facility Assessment report for the ChemSyn Science Laboratories in Lenexa, Kansas. The purpose of the RCRA Facility Assessment (RFA) is to identify information on releases at the facility, identify and evaluate solid waste management units (SWMUs) and other areas of concern (AOCs), make preliminary determinations on the need for further actions, and screen areas that pose no threat to human health or the environment. This document is a compilation of the information obtained during the Preliminary Review (PR) and Visual Site Inspection (VSI) portions of the RFA process.

Built in 1985, the ChemSyn Science Laboratories is a research and production laboratory, specializing in the production of a wide range of high purity specialty chemicals for drug development. These include bulk drug substances, pharmaceutical intermediates, ^{14}C and ^{3}H radiolabeled products and synthesis intermediates, and custom synthesis using stable isotopes. Wastes generated at ChemSyn Laboratories include small scale non-radioactive solvent waste, large scale custom synthesis non-radioactive solvent waste, low-level radioactive solvent waste (mixed waste), scintillation vials, and expired commercially produced chemical wastes.

This RFA document contains seven (7) sections. The first section of this document presents an overview of the purpose and procedures of the RFA. The second section describes the facility, waste management and regulatory history. The third section presents the environmental setting of the facility, including critical habitats and endangered species. The fourth and fifth sections present information on the thirteen (13) SWMUs and three (3) AOCs identified during the RFA process. The information in section four and five includes a discussion of the unit, waste characteristics and provides release information. The sixth section discusses the migration pathways and environmental receptors that would be affected by a potential release.

The final section, the conclusion, presents the finds of the RFA process and recommendations for further action. At the present time, there are no immediate threats to human health or the environment by the operation of ChemSyn Science Laboratories. Based on the information obtained during this RFA process, KDHE does not believe implementation of a RCRA Facility Investigation (RFI) is warrantied at this time. One storage cabinet, SWMU No. 3a, was taken out of service in 1995, but was not closed in accordance with RCRA regulations. KDHE recommends the facility close SWMU No. 3a in accordance with RCRA regulations.

1.0 INTRODUCTION

This report presents the findings of a Resource Conservation and Recovery Act (RCRA) facility assessment conducted at the ChemSyn Science Laboratories, EPA I.D.# KSD980966501, located at 13605 W. 96th Terrace, in Lenexa, Kansas. This RCRA facility assessment is being conducted by the Kansas Department of Health and Environment (KDHE).

A RCRA facility assessment (RFA) is the first step in a process for implementing the corrective action provision of the 1984 RCRA Hazardous and Solid Waste Amendments (HSWA). Specifically, Sections 3004 (u), 3004 (v), and 3008 (h) grant U.S. EPA the authority to require corrective actions for releases of hazardous wastes and hazardous waste constituents for solid waste management units (SWMU) at RCRA facilities. The objectives of the RFA are to:

- identify and characterize Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs),
- determine if any release to the environment has occurred or has the potential to occur,
- identify any immediate threats to human health or the environment from an actual or potential release,
- and determine the need, or lack thereof, for further investigation or remedial action at the identified SWMUs and AOCs.

In August of 1995, EPA authorized KDHE to gather information and prepare the RFA for ChemSyn Science Laboratories. A 3007-Information request was sent by KDHE to ChemSyn on December 31, 1996 requesting specific information regarding facility operations, possible Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs). KDHE staff performed a Visual Site Inspection (VSI) at the facility on May 20, 1997 to identify SWMUs, AOCs and possible releases of hazardous wastes at the facility. The following persons participated in the VSI:

Andrea Austin	Kansas Department of Health and Environment
Steve Swaffar	Kansas Department of Health and Environment
Virgil Dodson	ChemSyn Science Laboratories
Nancy Decker	ChemSyn Science Laboratories

This report describes the facility and its operations and the facility's SWMUs and AOCs. Sources used to prepare this document include KDHE files, information provided by ChemSyn, field notes, and information gathered during conversations with facility staff and the VSI.

2.0 FACILITY DESCRIPTION AND HISTORY

2.1 Location and Nature of Business

ChemSyn Science Laboratories is located in the Northeast quarter of Section 4, Township 13 south, Range 24 east, 13605 West 96th Terrace in Lenexa, Johnson County, Kansas (Figure 1). The facility is located in the Lenexa Industrial Park at the corner of Pflumm Road and west 96th Terrace (Figure 2).

ChemSyn Science Laboratories is owned by Eagle-Picher Technologies, LLC of Joplin, Missouri. ChemSyn is a research and production laboratory, specializing in high purity specialty chemicals for drug development. These include bulk drug substances, pharmaceutical intermediates, ^{14}C (Carbon-14) and ^{3}H (tritium) radiolabeled products, synthesis intermediates, and custom synthesis using stable isotopes.

2.2 Site History

The main building of ChemSyn Science Laboratories was constructed on 5.14 acres in 1985. The hazardous waste storage shed (HWSS) and the solvent storage shed were constructed in 1988. The facility has 24,000 square feet contained in three buildings. Figure 3 depicts major site features including all structures, Solid Waste Management Units (SWMUs) and Areas of Concern (AOC). The area where the property is located was undeveloped land prior to the construction of the facility.

2.3 Waste Management History

ChemSyn generates characteristic and listed hazardous wastes, some of which are classified as mixed wastes. Wastes generated at ChemSyn Laboratories include small scale non-radioactive solvent waste, large scale custom synthesis non-radioactive solvent waste, low-level radioactive solvent waste (mixed waste), scintillation vials, and lab pack waste.

2.3.1 Small Scale Non-radioactive Solvent Waste

Small scale non-radioactive solvent waste is generated from synthesis of custom products and general laboratory activities. Solvent wastes are stored in one-gallon plastic jugs in fume hoods throughout the facility. Solvent wastes are accumulated and tracked by lab personnel while the jugs are being filled, jugs are removed from the fume hoods when full and bulked by the facility Safety Officer. Approximately 1132 gallons of this waste stream, combined with the large scale custom synthesis non-radioactive solvent waste is produced annually.

2.3.2 Large Scale Custom Synthesis Non-radioactive Solvent Waste

Large scale custom synthesis non-radioactive solvent waste is generated in the Good Manufacturing Practices (GMP) laboratories. This waste is accumulated in a 55-gallon drum located in the north GMP laboratory. Each drum has a "contents" sheet that maintains an inventory of the wastes put in the drums. When a drum is full, it is removed by the Safety Officer and moved to the hazardous waste storage shed to await transportation for disposal.

2.3.3 Low-level Radioactive Solvent Waste (Mixed Waste)

The fundamental and most comprehensive statutory definition of "mixed waste" is found in the Federal Facilities Compliance Act (FFCA) where Section 1004(41) was added to RCRA. Low-level radioactive solvent waste (mixed waste) is defined as waste that satisfies the definition of low-level radioactive waste (LLRW) and contains hazardous waste that either (1) is listed as a hazardous waste in Subpart D of 40 CFR Part 261 or (2) cause the LLRW to exhibit any of the hazardous waste characteristics identified in Subpart C of 40 CFR 261. According to the Low-Level Radioactive Waste Policy Amendments Act of 1985, LLRW is defined in 10 CFR 61.2 as "radioactive waste not classified as high-level radioactive waste, transuranic waste, spent nuclear fuel, or byproduct material as defined in section 11e.(2) of the Atomic Energy Act." LLRW is defined by what it is not and consequently is a very broad category of waste. It encompasses materials that are slightly above natural background levels to highly radioactive materials which require extreme caution when handling.

ChemSyn produces approximately 27 gallons (219 lbs.) of low-level radioactive solvent waste (mixed waste) per year. This mixed waste is generated during the synthesis of Carbon-14 and Tritium labeled products in all the laboratories except the GMP laboratories. The radioactive components of the waste has activity ranging from >0.1 uCi/ml to 0.9 Ci/ml. Satellite accumulation points are located in the fume hoods where the waste is accumulated in one gallon plastic coated glass jugs. Each jug has a "contents" sheet that tracks the contents of the waste put in each jug. When the jug is full, the hazardous waste label is dated and the jug and the tracking sheet is placed inside a plastic bag. Within three days, the waste is moved by the Safety Officer to one of seven storage cabinets.

2.3.4 Scintillation Vial Waste

The scintillation vial waste is generated in all laboratories except the GMP laboratories. Approximately 19 gallons (152 lbs.) of this waste is produced yearly. This waste is accumulated in a 55-gallon drum located in the northeast corner of the analytical lab. The drum is lined with two, 4mm liner with six inches of vermiculite placed in between the liners. When the drum is full, the lid is placed on the drum with a gasket seal and the date portion of the hazardous waste label is completed. Within three days, the drum is moved to the HWSS to await transportation for disposal.

2.3.5 Lab Pack Waste

Every six to nine months, ChemSyn performs a lab pack to dispose of expired or unwanted commercial chemicals. Approximately 115 lbs. of this type of waste are disposed of yearly. These lab packs are placed in the HWSS to await transportation for disposal.

2.4 Regulatory History

On December 11, 1984, ChemSyn Science Laboratories submitted a Notification of Hazardous Waste Activity to KDHE that stated hazardous and mixed wastes would be generated at the facility and an EPA identification number had been issued. Although the facility had not generated any

hazardous waste, KDHE conducted a RCRA inspection on May 23, 1985 for Chemsym Science Laboratories' new facility to determine compliance with state and federal regulations concerning hazardous waste.

On June 24, 1985, ChemSyn Science Laboratories requested information from KDHE on the storage requirements for hazardous waste. KDHE's response on June 25, 1985 stated, according to the inspection of the facility on May 23, 1985, the proposed waste storage area met the state and federal requirements for hazardous waste generators. The hazardous waste storage areas were established as less than 90-day storage areas.

Over the next five years, ChemSyn Laboratories submitted several requests to KDHE for extensions of accumulation time beyond 90 days for the storage of their mixed hazardous waste. These extensions were based on the inability of ChemSyn to obtain a facility that would accept and properly dispose of the mixed waste within the 90-day accumulation period. Due to inadequate treatment technology and disposal capacity to treat or dispose of mixed waste, ChemSyn is regulated as a generator and greater than 90-day storage facility for mixed waste.

On June 25, 1990, the State of Kansas received authorization to administer the RCRA radioactive mixed waste requirements in lieu of EPA. Under this authorization, KDHE issued a letter to ChemSyn on October 3, 1990 requesting that the facility submit a Part A Application to address storage of mixed waste in accordance with RCRA. On December 20, 1990, ChemSyn submitted a Hazardous Waste Permit Part A Application requesting permission to obtain interim status for the storage of 300 gallons of hazardous waste in one (1) unit under 3005 (e) of RCRA for a Treatment, Storage, and Disposal Facility (TSDF).

Under interim status, ChemSyn submitted a request for revisions to the Part A Permit application on December 30, 1991. The requested revisions included an increase in the storage capacity to 450 gallons of hazardous waste in five (5) units. KDHE approved this request on January 16, 1992. On May 16, 1995, ChemSyn submitted a request for revisions to the Part A permit application. This Part A permit application requested permission to store up to 768 gallons of mixed waste in seven (7) storage cabinets and one (1) storage shed. On June 26, 1995, KDHE issued a letter of approval for this request.

ChemSyn notified KDHE on March 3, 1998 of organizational changes within Eagle-Picher Industries, Inc. KDHE responded on March 10, 1998 with a request for the filing of a new Part A Application to reflect the change of owner. On May 14, 1998, ChemSyn submitted a revised Part A to reflect the change in owner. In addition, this Part A application requested the addition of two (2) storage cabinets to allow the facility to store up to 936 gallons of waste in nine (9) storage cabinets and one (1) storage shed. KDHE requested additional financial assurance for these additional cabinets. On February 12, 1999, ChemSyn submitted a revised Part A for a change in facility contact.

A partial closure plan for the mixed waste storage shed was submitted to KDHE in May 1993. KDHE notified ChemSyn on May 3, 1994 of the closure plan's approval and requirements for a public comment period before initiation of the closure plan. Due to the inability of ChemSyn to dispose of six (6), 30-gallon drums of mixed waste in the storage shed, the closure plan was not initiated. Once proper disposal of the mixed waste has been completed, ChemSyn may proceed with closure of the storage shed.

On October 3, 1995, ChemSyn entered into a Consent Agreement with KDHE for the payment of the penalty, assessed as a result of an inspection on January 30, 1995. The penalty, $26,000, was assessed for repeated violations of K.A.R. 28-31-4(c)(1), K.A.R. 28-31-14, K.A.R. 28-31-4(j)(1)(A), K.A.R. 28-31-4(g)(2), K.A.R. 28-31-4(g)(4), and K.A.R. 28-31-8.

While EPA evaluates possible exemptions and resolves the issue of mixed waste rulemaking, the Office of Solid Waste (OSW) recommends that EPA regions and states authorized under RCRA to regulate mixed waste temporarily suspend the call-in or processing of final RCRA Part B permits where the only reason for a Part B permit is the on-site storage of mixed waste. Currently, ChemSyn remains subject to RCRA section 3010 notification and Part A filing requirements, other Part 270 interim requirements, Part 265 interim status standards, and section 3008(h) corrective action authorities, as well as other relevant hazardous waste regulations, including the land disposal restrictions.

3.0 ENVIRONMENTAL SETTING

3.1 Climate and Topography

The climate of Johnson County is characterized by wide daily and annual variations in temperature, with moderate precipitation, mild winters, and hot summers. The normal annual precipitation for the area is approximately 38 inches, with the majority of the precipitation falling between April and September. January is the month with the lowest annual precipitation (1.07 inches) and June has the highest annual precipitation (5.3 inches). The normal average temperature of the county is 54.8°F. Temperatures may achieve as high as 114°F and as low as -15°F. The regional average wind speed is 10.7 miles per hour.

Johnson County lies partly within the Attenuated Drift Border division of the Dissected Till Plains and partly in the Osage Cuestas division of the Osage Plains. Much of the area consists of gently rolling uplands with hilly areas along the streams. North-flowing streams tributary to the Kansas River, such as Kill Creek, Cedar Creek, and Mill Creek, have steeper gradients and greater local relief than east-flowing and south-flowing streams.

The ChemSyn Science Laboratories, located in Johnson County, is in the Central Lowland province of the Interior Plains. Its topography is characterized as a nearly flat to gently rolling plain that is moderately dissected. The facility is constructed on a site that slopes gradually towards the northeast with a maximum elevation difference of six and one half feet. Overland water drainage goes northeast and runs into the Lenexa City Storm Water Sewer System. The facility does not lie within the 100-year floodplain. The mean elevation around the site is 1013 feet above sea level.

3.2 Geology and Hydrology

Johnson County is located on a regional geologic structure called the Prairie Plains monocline. The near-surface rocks in Johnson County dip gently northwest at an average rate of about 12 feet per mile. This dip is modified by a northeast-trending anticline.

Sedimentary rocks of primarily Paleozoic age overlie the Precambrian basement in Johnson County. The thickness of the Paleozoic rocks ranges from approximately 2,000 to 2,500 feet. The Pennsylvanian age rocks which outcrop in Johnson County are of the Missourian and Virgilian Stages. The basal near-surface bedrock is the Wyandotte Limestone and Bonner Springs Shale Formations of the Kansas City Group. Overlying these units, in ascending order, are the Plattsburg Limestone, Vialas Shale and Stanton Limestone Formations of the Lansing Group, and the Stranger Formation of the Douglas Group.

Overlying the bedrock are unconsolidated glacial, fluvial, lacustrine, and aeolian deposits of Pleisocene age. The unconsolidated sediments are largely glacial till and undifferentiated fluvial and lacustrine deposits of Kansan State. Recent alluvium along the Kansas River and its Tributaries are Wiconsinan and Recent in age. Ground water in Johnson County can be obtained from the unconsolidated Pleistocene deposits to a depth of approximately 70 to 100 feet, and from consolidated Pennsylvanian rocks to a depth of about 250 feet.

3.3 Critical Habitats and Endangered Species

Several federally and state protected species potentially occur at the ChemSyn Site. The U. S. Fish and Wildlife Service, Division of Endangered Species and the Environmental Service Section of the Kansas Department of Park and Wildlife provided information on the possible occurrence of threatened and endangered species. Threatened and endangered species known to occur in Johnson County are: Bald Eagles (*Haliaeetus leucocephalus*), American Burying Beetle (*Necrophorus americanus*), Eastern Spotted Skunk (*Spilogale putorius interrupta*), Eskimo Curlew (*Numenius borealis*), Northern Redbelly Snake (*Storeria occipitomaculata*), Peregrine Falcon (*Falco peregrinus*), Snowy Plover (*Charadrius alexandrinus*), Western Earth Snake (*Virginia valeriae elegans*), White-faced Ibis (*Plegadis chihi*), The listed species may migrate through the area, but nesting/foraging habitat for these species is lacking on the site. Because of the limited suitable habitat for the listed plants, Mead's Milkweed (*Asclepias meadii*) and Western Prairie Fringed Orchid (*Platanthera praeclara*) are unlikely to exist at the site.

4.0 SOLID WASTE MANAGEMENT UNITS (SWMUs)

A solid waste management unit (SWMU) is defined as "any discernable (solid) waste unit at a RCRA facility from which hazardous constituents might migrate, irrespective of whether the unit was intended for the management of solid and/or hazardous waste" (RCRA Facility Assessment Guidance Manual, 1986). In this report, 13 SWMUs are identified (Tables 1). Based on observations and data gathered by KDHE personnel on May 20,1997 during the Visual Site Investigation (VSI), the likelihood of a release was evaluated at each SWMU. The following sections present the information gathered for each SWMU.

4.1 Mixed Waste Storage Cabinet C-1

4.1.1 Unit and Waste Characteristics

The mixed waste storage cabinet C-1 was put into service in 1991. The storage cabinet is located on the east wall of the "C" Synthesis laboratory. The steel storage cabinet is designed for storage of flammable/combustible fluid storage with features that include four (4) shelves, double doors with a 3-point latch, double wall thermal barrier, and dual vents with flame arrestors.

Low-level radioactive solvent wastes generated during the synthesis of Carbon-14 and Tritium labeled products are stored in this cabinet. According to the RCRA Part A application, this cabinet is designed to contain up to 84 gallons of mixed waste. Currently the cabinet contains 84 gallons of mixed waste. The storage cabinet is depicted in Figure 3 as SWMU No.1. Photographs of the cabinet are presented in Appendix A, photo No. 1 and 2.

4.1.2 Release Information

Secondary containment of the cabinet consists of doors that are raised above the bottom of the cabinet to retain spilled liquid and reinforced shelves with built in troughs and leakproof wells to contain spills. In addition, each shelf is lined with absorbent pads and each gallon bottle is placed inside a plastic bag. The concrete floor and walls of the facility act as additional secondary containment. KDHE observed no evidence of a release or staining around the area. No visible cracks were observed on the concrete floor. No documentation of any release exists for the storage cabinet.

4.2 Mixed Waste Storage Cabinet C-2

4.2.1 Unit and Waste Characteristics

The mixed waste storage cabinet C-2 was put into service in 1991. The storage cabinet is located on the west wall of the facility, across from the "C" Synthesis laboratory. The steel storage cabinet is designed for storage of flammable/combustible fluid storage with features that include four (4) shelves, double doors with a 3-point latch, double wall thermal barrier, and dual vents with flame arrestors.

Table 1

Solid Waste Management Units (SWMUs) at ChemSyn Science Laboratories

SWMU No.	SWMU Name	Years of Operation	Wastes Managed	Recommendation
1	Storage Cabinet C-1	1991-Present	mixed waste solvents	No action at this time
2	Storage Cabinet C-2	1991-Present	mixed waste solvents	No action at this time
3	Storage Cabinet C-3	1995-Present	mixed waste solvents	No action at this time
3a	Storage Cabinet 3	1988-1995	mixed waste solvents	sampling
4	Storage Cabinet C-4	1991- Present	mixed waste solvents	No action at this time
5	Storage Cabinet C-5	1991-Present	mixed waste solvents	No action at this time
6	Storage Cabinet C-6	1991-Present	mixed waste solvents	No action at this time
7	Storage Cabinet C-7	1995-Present	mixed waste solvents	No action at this time
8	Hazardous Waste Storage	1988-Present	hazardous and mixed wastes	No action at this time
9	Waste compactor area	1991-Present	radioactive and solid waste	No action at this time
10	GMP Waste Solvent Barrel	1986-Present	waste solvents	No action at this time
11	Scintillation Vial Waste	1986-Present	Scintillation fluid and vials	No action at this time
12	Waste Storage in Fume Hoods	1986-Present	hazardous and mixed wastes	No action at this time

Low-level radioactive solvent wastes generated during the synthesis of Carbon-14 and Tritium labeled products are stored in this cabinet. According to the RCRA Part A application, this cabinet is designed to contain up to 84 gallons of mixed waste. Currently the cabinet contains 84 gallons of mixed waste. The storage cabinet is depicted in Figure 3 as SWMU No.2. A photograph of the cabinet is presented in Appendix A, photo No.3.

4.2.2 Release Information

Secondary containment of the cabinet consists of doors that are raised above the bottom of the cabinet to retain spilled liquid and reinforced shelves with built in troughs and leakproof wells to contain spills. In addition, each shelf is lined with absorbent pads and each gallon bottle is placed inside a plastic bag. The concrete floor in the facility provides additional secondary containment.

KDHE observed no evidence of a release or staining around the area. No visible cracks were observed on the concrete floor. No documentation of any release exists for the storage cabinet.

4.3 Mixed Waste Storage Cabinet C-3

4.3.1 Unit and Waste Characteristics

The mixed waste storage cabinet C-3 was put into service in 1995, replacing SWMU No.3a. Storage cabinet C-3 is located outside of the "D" Synthesis laboratory on the west wall. The steel storage cabinet is designed for storage of flammable/combustible fluid storage with features that include four (4) shelves, double doors with a 3-point latch, double wall thermal barrier, and dual vents with flame arrestors.

Low-level radioactive solvent wastes generated during the synthesis of Carbon-14 and Tritium labeled products are stored in this cabinet. According to the RCRA Part A application, this cabinet is designed to contain up to 84 gallons of mixed waste. Currently the cabinet contains 84 gallons of mixed waste. The Mixed Waste Storage Cabinet C-3 is depicted in Figure 3 as SWMU No.3. A photograph of the cabinet is presented in Appendix A, photo No.4.

The storage cabinet, identified as SWMU No.3a in Table 1, was placed in service in 1986 and taken out of service in 1995. Storage cabinet 3a is a steel cabinet similar in design to cabinet C-3 and had a total storage capacity of about 42 gallons. A KDHE inspection on January 30, 1995 noted that there was no secondary containment and several containers of waste were leaking. The storage cabinet depicted in Figure 3 as SWMU No. 3a is presented in Appendix A, Photo No.4a.

4.3.2 Release Information

Secondary containment of Cabinet C-3 consists of doors that are raised above the bottom of the cabinet to retain spilled liquid and reinforced shelves with built in troughs and leakproof wells to contain spills. In addition, each shelf is lined with absorbent pads and each gallon bottle is placed inside a plastic bag. The concrete floor in the facility provides additional secondary containment. KDHE observed no evidence of a release or staining around the area. No visible cracks were observed on the concrete floor. No documentation of any release exists for the storage cabinet. As stated in the previous section, a KDHE inspection on January 30, 1995 noted that there was no secondary containment and several containers of waste were leaking in SWMU No.3a.

4.4 Mixed Waste Storage Cabinet C-4

4.4.1 Unit and Waste Characteristics

The mixed waste storage cabinet C-4 was put into service in 1991. The storage cabinet is located outside of the "D" Synthesis laboratory on the west wall. The steel storage cabinet is designed for storage of flammable/combustible fluid storage with features that include four (4) shelves, double doors with a 3-point latch, double wall thermal barrier, and dual vents with flame arrestors.

Low-level radioactive solvent wastes generated during the synthesis of Carbon-14 and Tritium labeled products are stored in this cabinet. According to the RCRA Part A application, this

cabinet is designed to contain up to 84 gallons of mixed waste. Currently the cabinet contains 84 gallons of mixed waste. The storage cabinet is depicted in Figure 3 as SWMU No.4. Photographs of the cabinet are presented in Appendix A, photo No. 5 and 6.

4.4.2 Release Information

Secondary containment of the cabinet consists of doors that are raised above the bottom of the cabinet to retain spilled liquid and reinforced shelves with built in troughs and leakproof wells to contain spills. In addition, each shelf is lined with absorbent pads and each gallon bottle is placed inside a plastic bag. The concrete floor in the facility provides additional secondary containment. No visible cracks were observed on the concrete floor. KDHE observed staining within the secondary containment tray during an inspection on January 12, 1999. No documentation of any release exists for the storage cabinet.

4.5 Mixed Waste Storage Cabinet C-5

4.5.1 Unit and Waste Characteristics

The mixed waste storage cabinet C-5 was put into service in 1991. The storage cabinet is located outside of the "D" Synthesis laboratory on the west wall. The steel storage cabinet is designed for storage of flammable/combustible fluid storage with features that include four (4) shelves, double doors with a 3-point latch, double wall thermal barrier, and dual vents with flame arrestors.

Low-level radioactive solvent wastes generated during the synthesis of Carbon-14 and Tritium labeled products are stored in this cabinet. According to the RCRA Part A application, this cabinet is designed to contain up to 84 gallons of mixed waste. Currently the cabinet contains 84 gallons of mixed waste. The storage cabinet is depicted in Figure 3 as SWMU No.5. Photographs of the cabinet are presented in Appendix A, photo No. 5 and 6.

4.5.2 Release Information

Secondary containment of the cabinet consists of doors that are raised above the bottom of the cabinet to retain spilled liquid and reinforced shelves with built in troughs and leakproof wells to contain spills. In addition, each shelf is lined with absorbent pads and each gallon bottle is placed inside a plastic bag. The concrete floor in the facility provides additional secondary containment. KDHE observed no evidence of a release or staining around the area. No visible cracks were observed on the concrete floor. No documentation of any release exists for the storage cabinet.

4.6 Mixed Waste Storage Cabinet C-6

4.6.1 Unit and Waste Characteristics

The mixed waste storage cabinet C-6 was put into service in 1991. The storage cabinet is located in the loft area above the laboratories. The steel storage cabinet is designed for storage of flammable/combustible fluid storage with features that include four (4) shelves, double doors with a 3-point latch, double wall thermal barrier, and dual vents with flame arrestors.

Low-level radioactive solvent wastes generated from all labs, except the GMP lab, during the synthesis of Carbon-14 (^{14}C) and Tritium (^{3}H) labeled products are stored in this cabinet. According to the RCRA Part A application, this cabinet is designed to contain up to 84 gallons of mixed waste. Currently the cabinet contains 84 gallons of mixed waste. The storage cabinet is depicted in Figure 3 as SWMU No.6. Photographs of the cabinet are presented in Appendix A, photo No. 7 and 8.

4.6.2 Release Information

Secondary containment of the cabinet consists of doors that are raised above the bottom of the cabinet to retain spilled liquid and reinforced shelves with built in troughs and leakproof wells to contain spills. In addition, each shelf is lined with absorbent pads and each gallon bottle is placed inside a plastic bag. The concrete floor in the facility provides additional secondary containment. KDHE observed no evidence of a release or staining around the area. No visible cracks were observed on the concrete floor. A KDHE inspection report showed evidence of spillage or leakage from the containers in this cabinet in 1992.

4.7 Mixed Waste Storage Cabinet C-7

4.7.1 Unit and Waste Characteristics

The mixed waste storage cabinet C-7 was put into service in 1991. The storage cabinet is located outside of the "D" Synthesis laboratory on the west wall. The steel storage cabinet is designed for storage of flammable/combustible fluid storage with features that include four (4) shelves, double doors with a 3-point latch, double wall thermal barrier, and dual vents with flame arrestors.

Low-level radioactive solvent wastes generated during the synthesis of Carbon-14 and Tritium labeled products are stored in this cabinet. According to the RCRA Part A application, this cabinet is designed to contain up to 84 gallons of mixed waste. Currently the cabinet contains 59 gallons of mixed waste. The storage cabinet is depicted in Figure 3 as SWMU No.7. A photograph of the cabinet is presented in Appendix A, photo No.9.

4.7.2 Release Information

Secondary containment of the cabinet consists of doors that are raised above the bottom of the cabinet to retain spilled liquid and reinforced shelves with built in troughs and leakproof wells to contain spills. In addition, each shelf is lined with absorbent pads and each gallon bottle is placed inside a plastic bag. The concrete floor in the facility provides additional secondary containment. KDHE observed no evidence of a release or staining around the area. No visible cracks were observed on the concrete floor. No documentation of any release exists for the storage cabinet.

4.8 Hazardous Waste Storage Shed

4.8.1 Unit and Waste Characteristics

The Hazardous Waste Storage Shed (HWSS) was constructed in 1988 and is located south of the main facility and just west of the solvent storage building. This shed consists of a 19'6" x 13"9" corrugated metal building with a concrete floor slab. A six foot high concrete curb surrounds the

slab and a concrete ramp is used to entry/exit. There is no drainage in the building. According to the Part A Permit application, the maximum amount of waste that can be store in this shed greater than 90-days is 180 gallons. The location of the HWSS is depicted in Figure 3 as SWMU No.8.

This shed has been used to store various hazardous wastes including expended solvents such as benzene, chloroform, acetonitrile, acetone, methylene chloride, hexane, ethyl acetate, methanol, ethanol, tetrahydrofuran, pentane, methyl ethyl ketone, xylene, toluene, acetylaldehyde, pyridine, etc. Other wastes stored in the hazardous waste storage shed include greater than de-minimus levels of liquid scintillation fluids and the above listed solvents contaminated with tritium or carbon-14. Photographs of the shed are presented in Appendix A, photo No. 10, 11, and 12.

4.8.2 Release Information

Release controls at this shed include a concrete floor with a 6-inch curb surrounding the slab. The concrete slab had no visible cracks. KDHE observed no evidence of a release or staining around the area. The floor appeared to be in good condition without cracks. No documentation of any release exists for the storage shed.

4.9 Waste Compactor Area

4.9.1 Unit and Waste Characteristics

The Waste Compactor Area is used to compact radioactive solid waste, hazardous waste and other nonhazardous solid waste in 55-gallon drums. A hydraulic compressor is used to compact waste into a 55-gallon drum. No liquid waste is managed at this SWMU. After the waste is compacted, the Safety Officer moves the drums to the hazardous waste storage shed to await transportation for disposal. The location of the Waste Compactor Area is depicted in Figure 3 as SWMU No.9. A photograph of the Waste Compactor Area is presented in Appendix A, photo No.13.

4.9.2 Release Information

KDHE observed no evidence of a release or staining around the area. No documentation of any release exists for the waste compactor area.

4.10 GMP Waste Solvent Barrels

4.10.1 Unit and Waste Characteristics

The waste generated and stored in the GMP (Good Manufacturer Practices) Waste Solvent Barrels is non-radioactive solvent waste and is produced as a result of large scale custom synthesis process. This satellite accumulation area is located alone the south wall of the north GMP laboratory. Two 55-gallon drums are used alternately in this area for the accumulation of waste. When one drum is full, lab personnel date the drum and notify the Safety Officer, who moves the drum to the HWSS within three (3) days to await transportation for disposal. The location of the GMP Waste Solvent Barrels is depicted in Figure 3 as SWMU No.10. Photographs of the GMP Waste Solvent Barrels are presented in Appendix A, photo No. 14, 15, and 16.

4.10.2 Release Information

KDHE observed no evidence of a release or staining around the area. The building act as secondary containment. No visible cracks were observed on the concrete floor. No documentation of any release exists for the GMP waste solvent barrel.

4.11 Scintillation Vial Waste Storage Barrel

4.11.1 Unit and Waste Characteristics

The liquid Scintillation vial waste is produced as a result of scintillation counting of radioactive isotopes during the synthesis of Carbon-14 and Tritium labeled products. The scintillation fluid amplifies the signal and gives of a flash of light detected by the counter. Once the scintillation fluid and vials are discarded, they are accumulated in a 55-gallon barrel in the northeast corner of the analytical laboratory. The Scintillation Vial Waste Storage Barrel is labeled as hazardous waste, lined with two (2) 4mm liner with 6 inches of vermiculites between the liners in the bottom of the drum. Once the drum is full, the liners are closed with zip ties and the drum lid is closed with a gasket seal. This waste is radioactive, but exempt under NCR regulations. The location of the Scintillation Vial Waste Storage Barrel is depicted in Figure 3 as SWMU No.11. A photograph of the Scintillation Vial Waste Storage Barrel is presented in Appendix A, photo No.17.

4.11.2 Release Information

The building is secondary containment for this SWMU. KDHE observed no evidence of a release or staining around the area. No visible cracks were observed on the concrete floor. No documentation of any release exists for the Scintillation Vial Waste Storage Barrel.

4.12 Waste Storage in Fume Hood

4.12.1 Unit and Waste Characteristics

The waste stored in the Fume Hood in "A" Synthesis Lab is non-radioactive solvent waste and is produced as a result of small scale custom synthesis process. This satellite accumulation area is located alone the east wall of the "A" Synthesis Lab and consists of one (1) 55-gallon and one (1) 30-gallons drum. The 55-gallons drum manages non-chlorinated solvents and the 30-gallon drums is used for chlorinated solvents. When a drum is full, lab personnel date the drum and notify the Safety Officer, who moves the drum to the HWSS to await disposal. The location of the Waste Storage in Fume Hood is depicted in Figure 3 as SWMU No.12. A photograph of the Waste Storage in Fume Hood is presented in Appendix A, photo No.18.

Additional waste storage in fume hoods through the labs, except the GMP lab, is radioactive solvent waste accumulated in one-gallon plastic lined glass jugs. When a jug is full, lab personnel date the jug and notify the Safety Office, who moves the jug to one of the mixed waste storage cabinets. A photograph of the gallon jugs of waste storage in fume hoods is presented in Appendix A, photo No.18a.

4.12.2 Release Information

Secondary containment at the waste storage in the fume hood consists of the fume hood and surrounding splash guards. In addition, the building provides additional containment. KDHE observed no evidence of a release or staining around the area. No visible cracks were observed on the concrete floor. No documentation of any release exists for the waste storage.

5.0 AREAS OF CONCERN (AOCs)

Areas of Concern (AOC) include those units which do not meet the definition of SWMU but may have had releases or potential release of hazardous constituents to the environment on a non-routine basis. Three (3) AOC were identified at the ChemSyn facility.

5.1 Quarantine/Release Area

5.1.1 Unit and Waste Characteristics

The Quarantine/Release Area is located in the southeast corner of the main building and is used for the storage of new materials. According to facility personnel, new materials are held in this quarantine area until the material have been tested in accordance with the facility's Quality Assurance/Quality Control (QA/QC) program. If a material does not meet the QA/QC requirements, the materials is discarded through lab packs. The facility disposes of approximately 115 pounds of lab pack waste yearly. The location of the Quarantine/Release Area is depicted in Figure 3 as AOC No.1. A photograph of the Quarantine/Release Area is presented in Appendix A, photo No.19.

5.1.2 Release Information

The building provides secondary containment for the Quarantine/Release Area. KDHE observed no evidence of a release or staining around the area. No visible cracks were observed on the concrete floor. No documentation of any release exists for the Quarantine/Release Area.

5.2 Catalog Materials Storage Refrigerator

5.2.1 Unit and Waste Characteristics

The Catalog Materials Storage Refrigerator is located in the southeast corner of the building in a room inside the shipping and receiving area. Finished products, which the facility markets as Catalog Materials, are stored in this AOC. Most of these products are used as the active ingredients for pharmaceuticals. The refrigerator has a capacity of approximately 18 Cubic feet and is labeled as to the usage and contents. The containers in which these material are stored are very small. The containers range in sizes from less than an ounce to one gallon. The location of the Catalog Materials Storage Refrigerator is depicted in Figure 3 as AOC No.2. Photographs of the Catalog Materials Storage Refrigerator are presented in Appendix A, photo No. 20 and 21.

5.2.2 Release Information

Secondary containment at this AOC consists of the refrigerator and the surrounding room. In addition, the building provides additional containment. KDHE observed no evidence of a release or staining around the area. No visible cracks were observed on the concrete floor. No documentation of any release exists for the waste storage.

5.3 Solvent Storage Building

5.3.1 Unit and Waste Characteristics

The Solvent Storage Building was built in 1988 and is used for the storage of new solvents. Solvent containers range in size from quart to 55-gallons. All containers are labeled and sorted according to compatibility. The containers of solvent are placed on wooden pallets and/or metal shelves inside the Solvent Storage Building. The location of the Solvent Storage Building is depicted in Figure 3 as AOC No.3. Photographs of the Solvent Storage Building are presented in Appendix A, photo No. 22 and 23.

5.3.2 Release Information

Secondary containment at this AOC consists of the concrete floor and the walls of the building. The building has a ramp to enter/exit the building. KDHE observed no evidence of a release or staining around the area. No visible cracks were observed on the concrete floor. No documentation of any release exists for the Solvent Storage Building.

Table 2

Areas of Concern (AOCs) at ChemSyn Science Laboratories

AOC No.	AOC Name	Years Operated	Product Managed	Recommendation
1	Quarantine/Release Area	1986-Present	virgin chemicals of various types	No further action
2	Catalog Materials Storage Refrigerator	1986-Present	pure products for small special order materials	No further action
3	Solvent Storage Building	1988-Present	various types of new/unused solvents	No further action

6.0 MIGRATION PATHWAYS AND ENVIRONMENTAL RECEPTORS

A release of hazardous contaminants from the ChemSyn Science Laboratories could possibly negatively impact surface waters, groundwater and/or soils. The following sections discuss the potential of contamination via these migration pathways to affect human health and the environment.

6.1 Groundwater

Groundwater in the vicinity of the facility is not used for drinking water. According to the Kansas Water Well Program, within a four (4) mile radius of the facility, there are several monitoring wells, but no off-site domestic drinking water wells. The potential release of any waste or product from the operation at the ChemSyn Laboratories is very low. All of the SWMUs and AOCs are managed inside a building with a concrete floor or within some type of secondary containment. If a release were to occur outside secondary containment, the potential impact to groundwater would be low due to the fact that the area outside the buildings is asphalt.

No evidence of a release of hazardous contaminants to the groundwater at the ChemSyn Science Laboratory has been previously documented, nor was evidence of a release to groundwater discovered during this assessment. At the identified SWMUs and AOCs, no contamination was detected which has the potential to migrate to groundwater.

6.2 Surface Water

The potential is low for a release to the surface water. All of the SWMUs and AOCs are managed inside a building with a concrete floor or within some type of secondary containment. If a release did occur, it would have a greater impact on the surface water as opposed to the groundwater because of the runoff potential at the site. A release to the surface water would reach the Middle Indian Creek Watershed via the stormwater drainage system. The potential is low for a release to contamination the surface water and adversely affect human health and the environment.

6.3 Soil

The potential for human exposure from a release to the soil is low. As stated previously, all of the SWMUs and AOCs are managed within some type of secondary containment or inside a building with a concrete floor. There are no documented releases or evidence to suggest a release to the soil has occurred at this site.

No evidence of a release of hazardous contaminants to the soil at the ChemSyn Science Laboratory has been previously documented, nor was evidence of a release to soil discovered during this assessment. At the identified SWMUs and AOCs, no contamination was detected which has the potential to migrate to soil.

7.0 CONCLUSION

The Kansas Department of Health and Environment (KDHE) has completed the RCRA Facility Assessment at the ChemSyn Science Laboratories to determine whether any release to the environment has occurred or has the potential to occur at the facility or if there is any immediate or potential threats to human health or the environment by the operation of ChemSyn Science Laboratories.

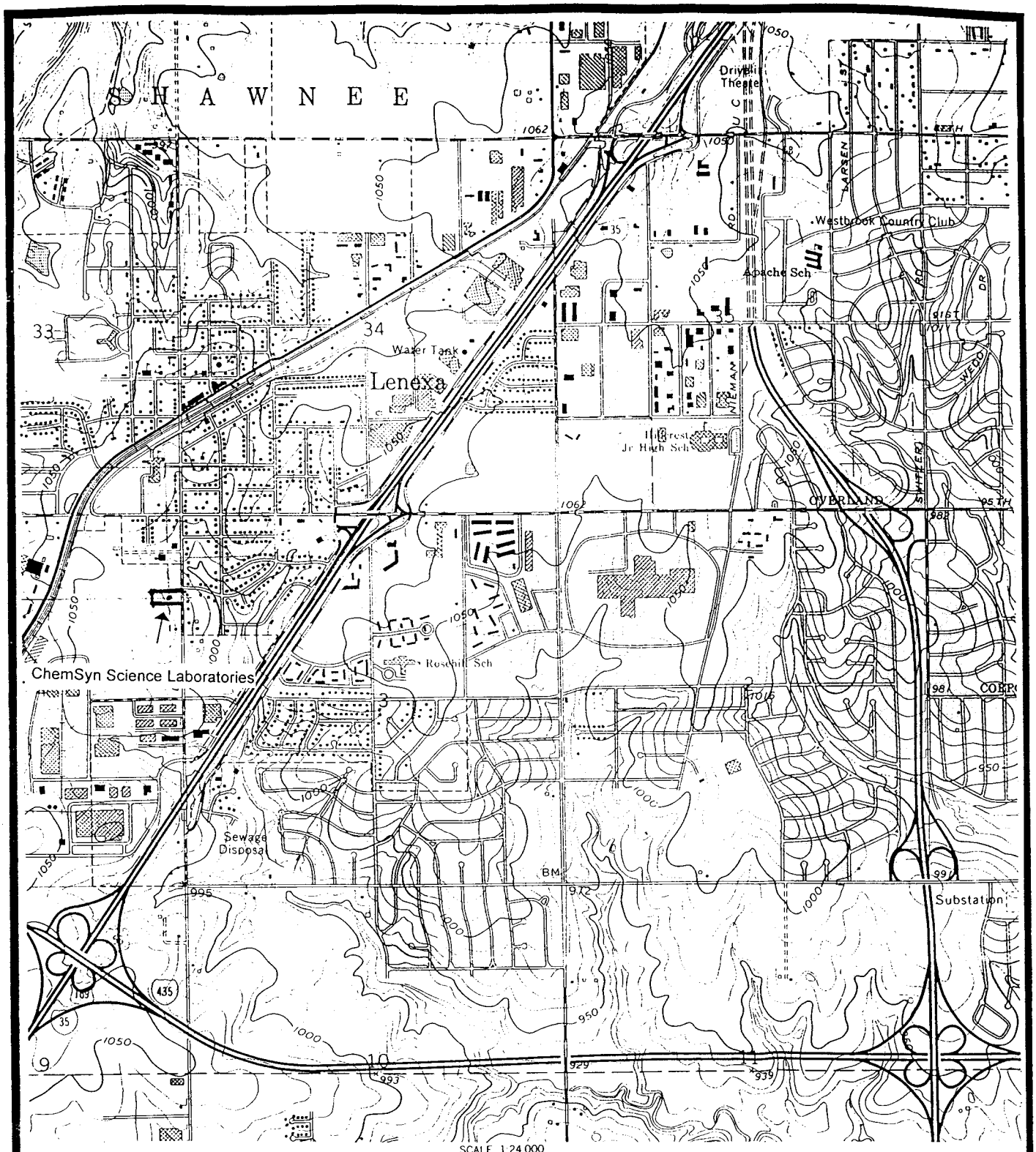
KDHE recommends the following actions be taken to address the environmental concerns at the ChemSyn Science Laboratory.

1. Since Mixed Waste Storage Cabinet 3a has been taken out of service in 1995 as a mixed waste storage unit, samples should be taken to determine the possibility of contamination. If the cabinet is contaminated, the cleanup activities should be completed in accordance with RCRA and AEA regulatory requirements.

2. The facility should make a good faith effort to dispose of the mixed waste through a permitted disposal facility. After disposal of the mixed waste, all storage units need to be closed in accordance with RCRA and AEA regulatory requirements. Until such time, the facility must continue to store the waste in accordance with RCRA and AEA guidelines and procedures to ensure the safety of human health and the environment.

At the present time, there are no immediate threats to human health or the environment by the operation of ChemSyn Science Laboratories. Due to the lack of suitable disposal facilities available in the United States to treat or dispose of mixed wastes, KDHE recommends that ChemSyn continue to store and manage their mixed waste on-site. Based on information obtained during the RFA process, KDHE does not believe implementation of a RCRA Facility Investigation is warrantied at this time.

FIGURES

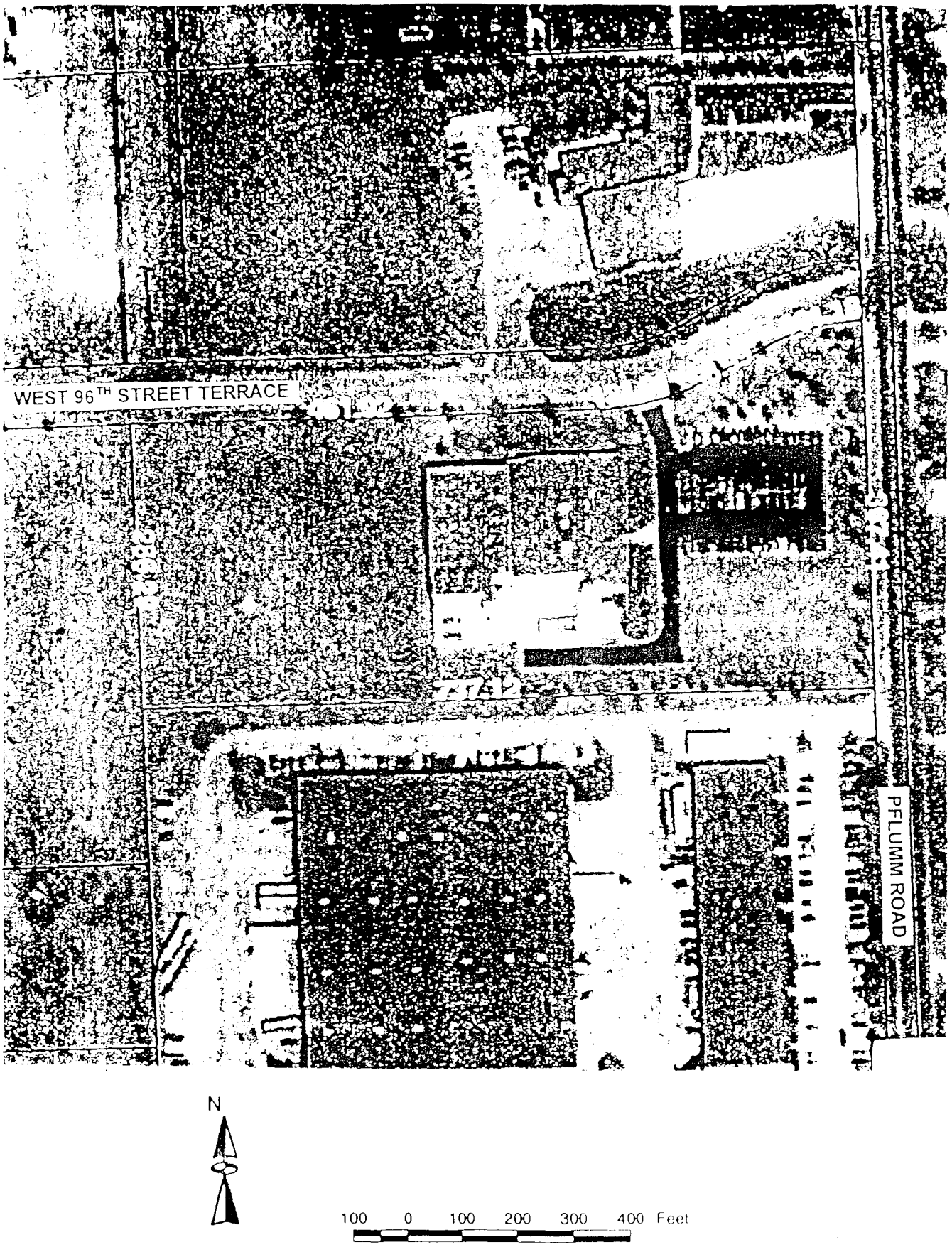


THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
AND STATE GEOLOGICAL SURVEY, LAWRENCE, KANSAS 66044
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

KANSAS DEPARTMENT OF HEALTH & ENVIRONMENT

Figure 1 Site Location Map

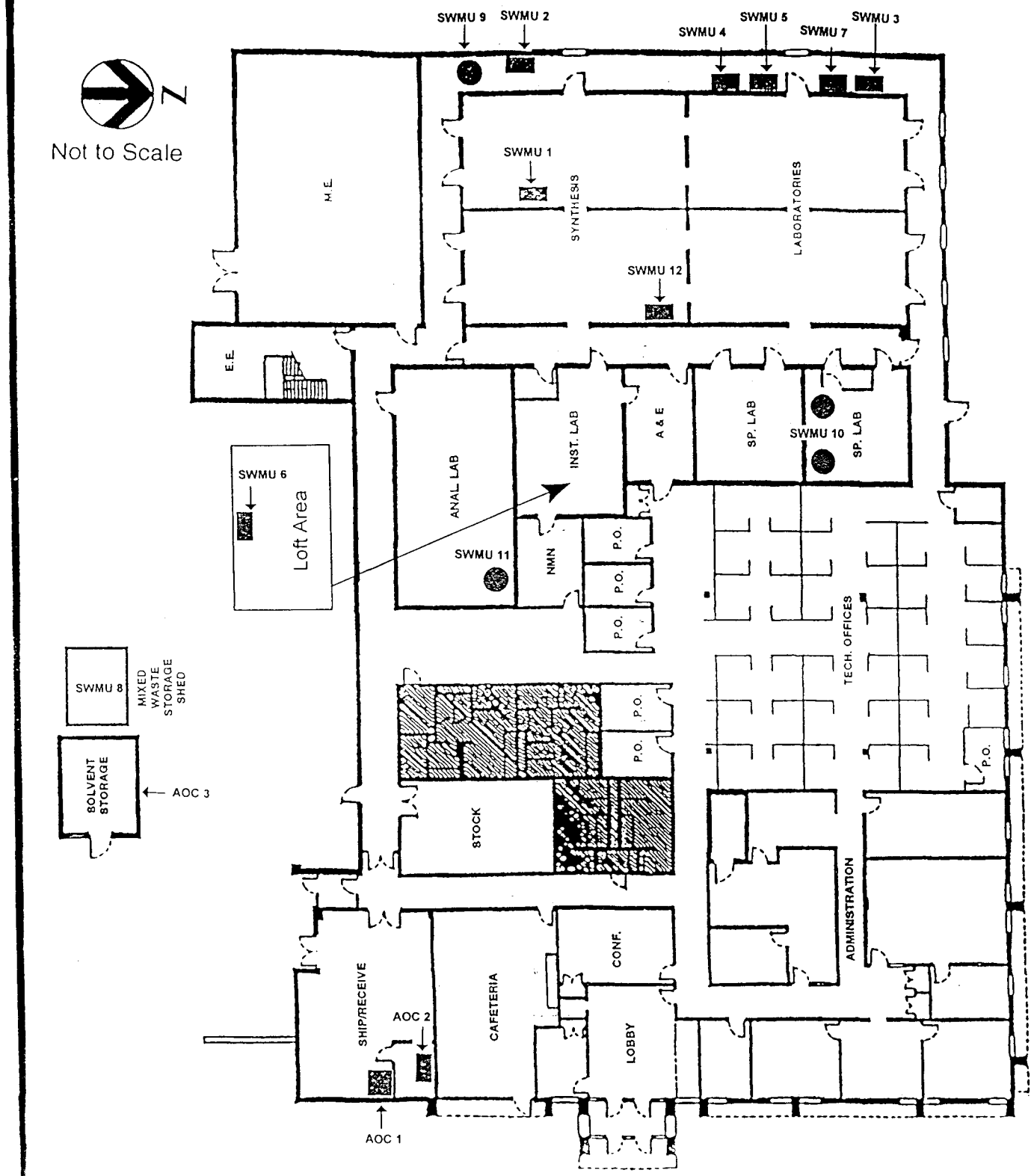
ChemSyn Science Laboratories
Lenexa, Kansas



KANSAS DEPARTMENT OF HEALTH & ENVIRONMENT

Figure 2 Site Location Map with Property Boundaries

ChemSyn Science Laboratories
Lenexa, Kansas



Legend

SWMU - Solid Waste Management Unit

AOC - Area of Concern

KANSAS DEPARTMENT OF HEALTH & ENVIRONMENT

Figure 3 Facility Map with SWMUs and AOCs locations

ChemSyn Science Laboratories
Lenexa, Kansas

APPENDIX

Kansas Department of Health and Environment
Division of Environment
Bureau of Waste Management
PHOTO MOUNTING SHEET

Name of Site: ChemSyn Laboratories **EPA ID #** KSD980966501

Location: 13605 W. 96th Street, Lenexa, Kansas 66215 **County:** Johnson

SWMU # 1

Picture # 1 **Date:** May 20, 1997 **Time:** 11:00 AM

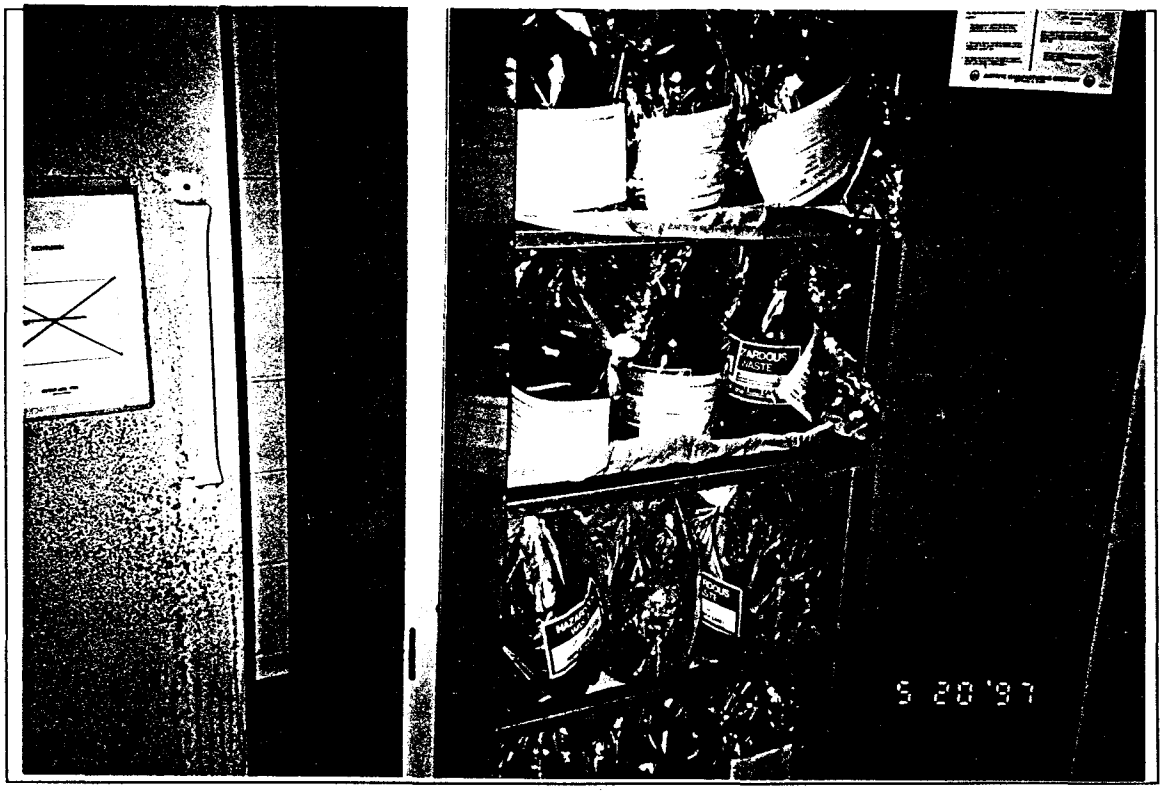
Camera: Minolta Freedom II 35mm **Photographer:** Steve Swaffer

Comments: Mixed Waste Storage Cabinet C-1. This cabinet currently holds 84 gallons of mixed waste, the maximum amount allowed under the facility's interim status Part A Application.

Kansas Department of Health and Environment
Division of Environment
Bureau of Waste Management
PHOTO MOUNTING SHEET

Name of Site: ChemSyn Laboratories **EPA ID #** KSD980966501

Location: 13605 W. 96th Street, Lenexa, Kansas 66215 **County:** Johnson



SWMU # 1

Picture # 2 **Date:** May 20, 1997 **Time:** 11:00 AM

Camera: Minolta Freedom II 35mm **Photographer:** Steve Swaffer

Comments: This photograph shows the inside of Mix Waste Storage Cabinet C-1. Each shelf is supplied with a secondary containment tray.

Kansas Department of Health and Environment
Division of Environment
Bureau of Waste Management
PHOTO MOUNTING SHEET

Name of Site: ChemSyn Laboratories **EPA ID #** KSD980966501

Location: 13605 W. 96th Street, Lenexa, Kansas 66215 **County:** Johnson

SWMU # 2

Picture # 3 **Date:** May 20, 1997 **Time:** 11:00 AM

Camera: Minolta Freedom II 35mm **Photographer:** Steve Swaffer

Comments: Mix Waste Storage Cabinet C-2. The vent pipe is visible in the upper right corner of this photograph.

Kansas Department of Health and Environment
Division of Environment
Bureau of Waste Management
PHOTO MOUNTING SHEET

Name of Site: ChemSyn Laboratories **EPA ID #** KSD980966501

Location: 13605 W. 96th Street, Lenexa, Kansas 66215 **County:** Johnson

SWMU # 3

Picture # 4 **Date:** May 20, 1997 **Time:** 11:00 AM

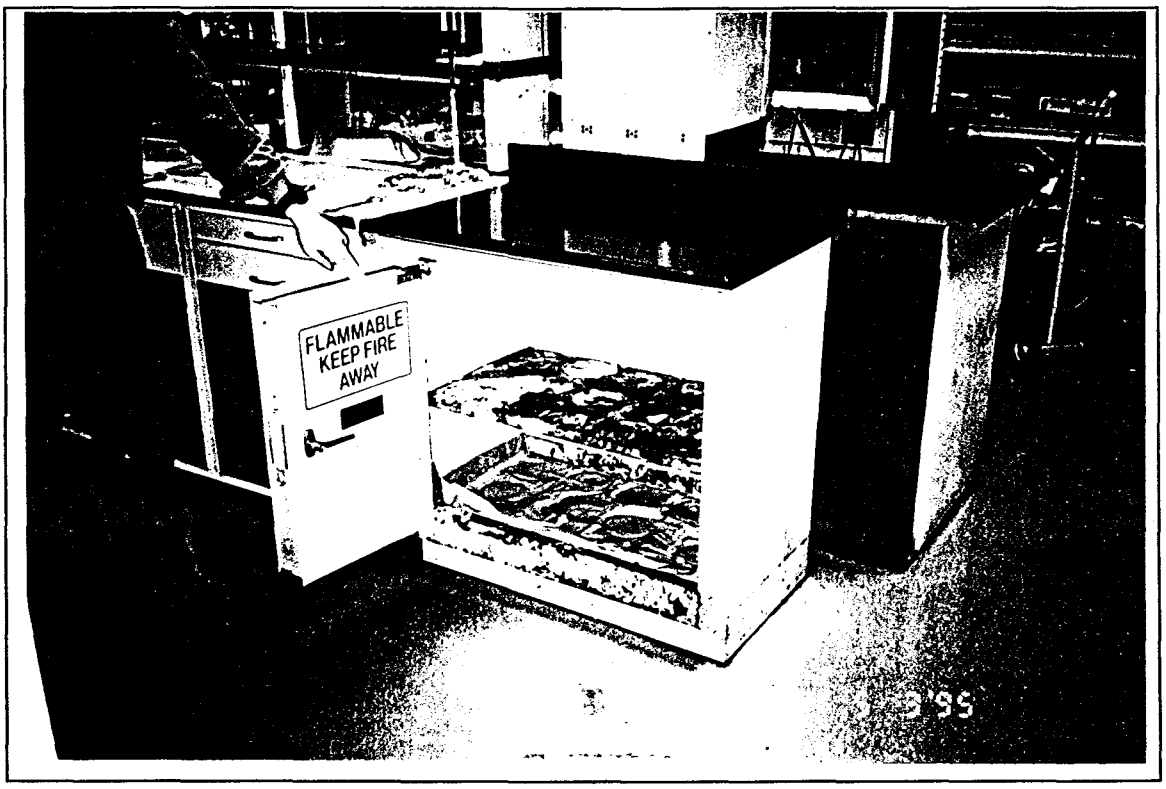
Camera: Minolta Freedom II 35mm **Photographer:** Steve Swaffer

Comments: Mix Waste Storage Cabinet C-3. Each gallon of waste is labeled and placed inside a plastic bag before being placed in the cabinet.

Kansas Department of Health and Environment
Division of Environment
Bureau of Waste Management
PHOTO MOUNTING SHEET

Name of Site: ChemSyn Laboratories **EPA ID #** KSD980966501

Location: 13605 W. 96th Street, Lenexa, Kansas 66215 **County:** Johnson



SWMU # 3a

Picture # 4a **Date:** May 3, 1995 **Time:** 11:30 AM

Camera: Olympus 35mm **Photographer:** Richard Bronaugh

Comments: This SWMU was used for the storage of mixed waste until 1995. Mixed Waste Storage Cabinet C-3 replaced this cabinet.

Kansas Department of Health and Environment
Division of Environment
Bureau of Waste Management
PHOTO MOUNTING SHEET

Name of Site: ChemSyn Laboratories **EPA ID #** KSD980966501

Location: 13605 W. 96th Street, Lenexa, Kansas 66215 **County:** Johnson

SWMU # 4 & 5

Picture # 5 **Date:** May 20, 1997 **Time:** 11:00 AM

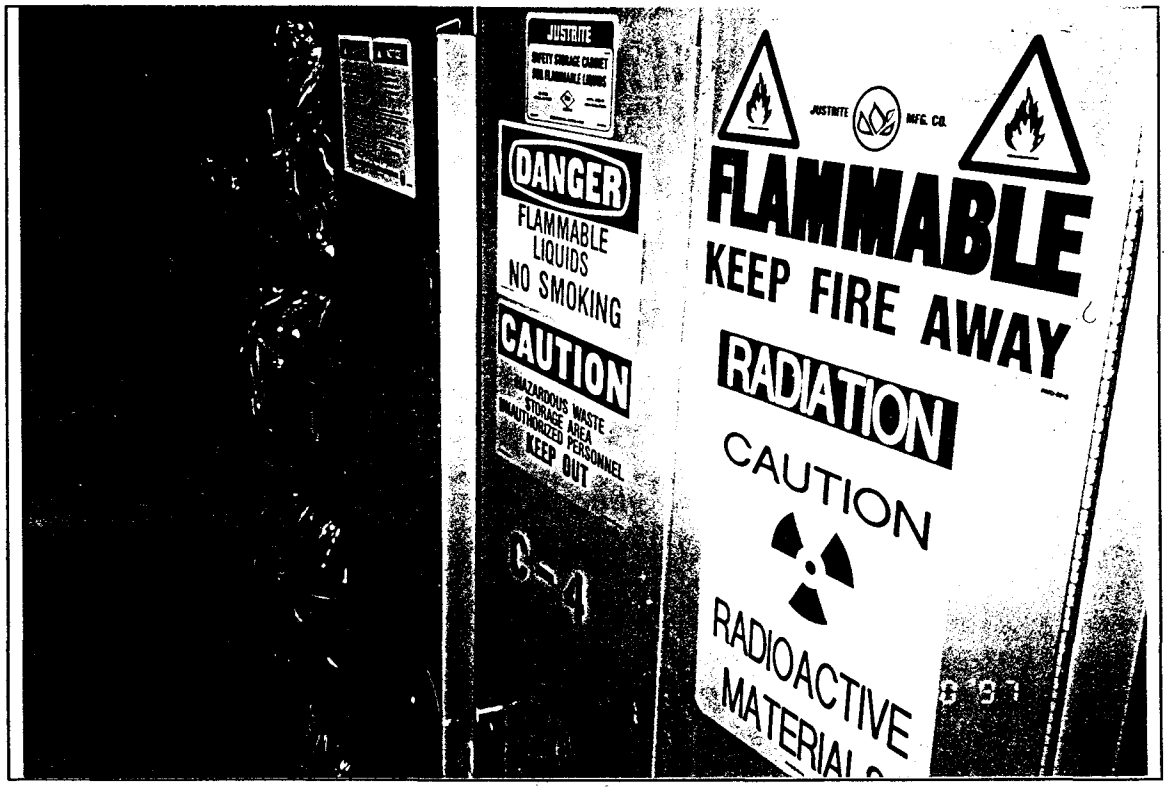
Camera: Minolta Freedom II 35mm **Photographer:** Steve Swaffer

Comments: This photograph shows the inside of cabinet C-4 and the outside of cabinet C-5. Each cabinet has a storage capacity of 84 gallons.

Kansas Department of Health and Environment
Division of Environment
Bureau of Waste Management
PHOTO MOUNTING SHEET

Name of Site: ChemSyn Laboratories **EPA ID #** KSD980966501

Location: 13605 W. 96th Street, Lenexa, Kansas 66215 **County:** Johnson



SWMU # 4 & 5

Picture # 6 **Date:** May 20, 1997 **Time:** 11:00 AM

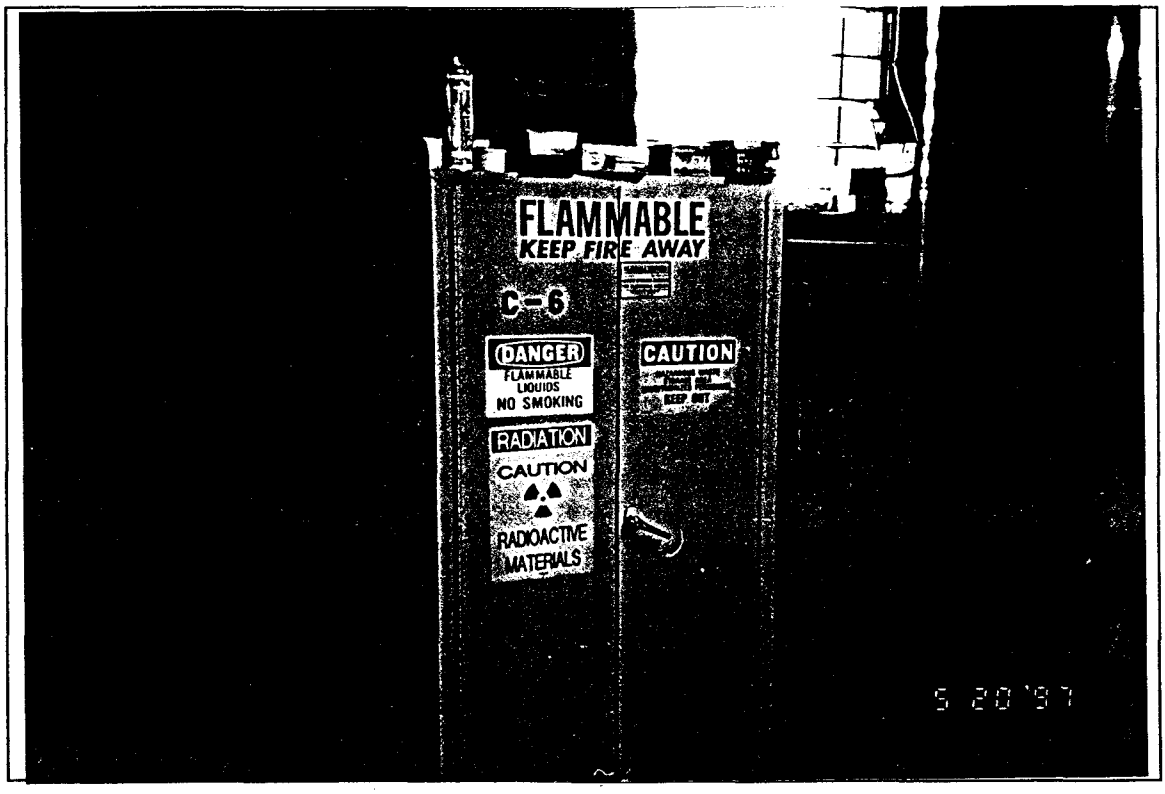
Camera: Minolta Freedom II 35mm **Photographer:** Steve Swaffer

Comments: This photograph shows the inside of cabinet C-5 and the outside of cabinet C-4. The cabinets are labeled on the outside to denote the contents are hazardous, flammable, and radioactive.

Kansas Department of Health and Environment
Division of Environment
Bureau of Waste Management
PHOTO MOUNTING SHEET

Name of Site: ChemSyn Laboratories **EPA ID #** KSD980966501

Location: 13605 W. 96th Street, Lenexa, Kansas 66215 **County:** Johnson



SWMU # 6

Picture # 7 **Date:** May 20, 1997 **Time:** 11:00 AM

Camera: Minolta Freedom II 35mm **Photographer:** Steve Swaffer

Comments: This photograph shows the outside of cabinet C-6. This cabinet is located in the loft area above the laboratories. This cabinet contains primarily scintillation waste.

Kansas Department of Health and Environment
Division of Environment
Bureau of Waste Management
PHOTO MOUNTING SHEET

Name of Site: ChemSyn Laboratories **EPA ID #** KSD980966501

Location: 13605 W. 96th Street, Lenexa, Kansas 66215 **County:** Johnson

SWMU # 6

Picture # 8 **Date:** May 20, 1997 **Time:** 11:00 AM

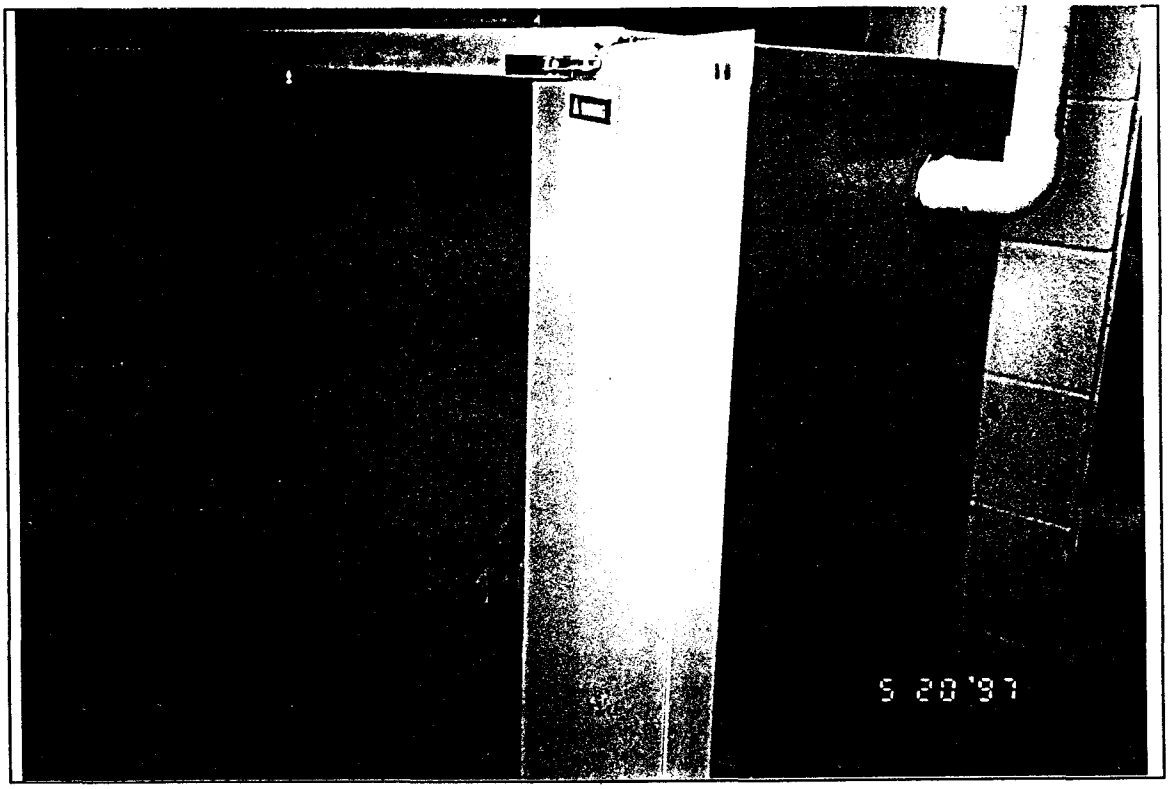
Camera: Minolta Freedom II 35mm **Photographer:** Steve Swaffer

Comments: This photograph shows the inside of cabinet C-6.

Kansas Department of Health and Environment
Division of Environment
Bureau of Waste Management
PHOTO MOUNTING SHEET

Name of Site: ChemSyn Laboratories **EPA ID #** KSD980966501

Location: 13605 W. 96th Street, Lenexa, Kansas 66215 **County:** Johnson



SWMU # 7

Picture # 9 **Date:** May 20, 1997 **Time:** 11:00 AM

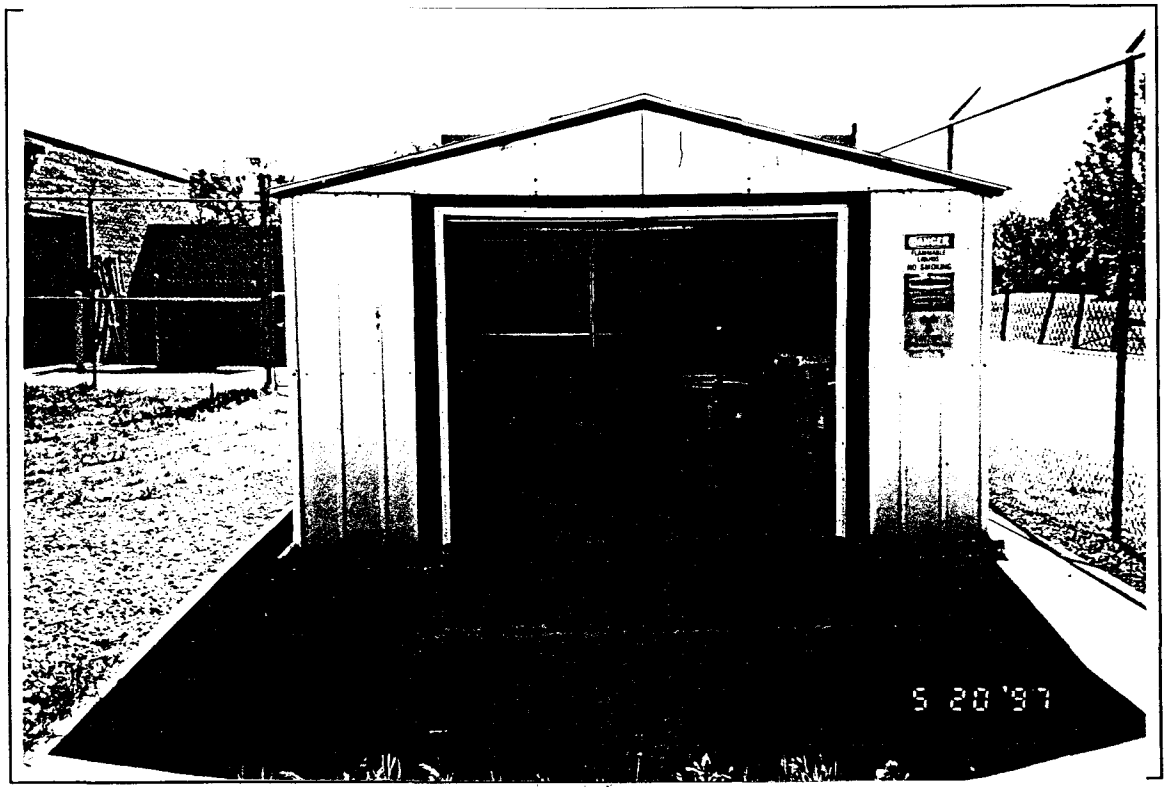
Camera: Minolta Freedom II 35mm **Photographer:** Steve Swaffer

Comments: This photograph shows the inside of cabinet C-7. Currently this cabinet stores 59 gallons of mixed waste.

Kansas Department of Health and Environment
Division of Environment
Bureau of Waste Management
PHOTO MOUNTING SHEET

Name of Site: ChemSyn Laboratories **EPA ID #** KSD980966501

Location: 13605 W. 96th Street, Lenexa, Kansas 66215 **County:** Johnson



SWMU # 8

Picture # 10 **Date:** May 20, 1997 **Time:** 1:30 PM

Camera: Minolta Freedom II 35mm **Photographer:** Steve Swaffer

Comments: The Hazardous Waste Storage Shed is approximately 20' x 14', constructed of corrugated metal with a concrete floor slab. A six inch high concrete curb surrounds the slab and a concrete ramp is used to enter/exit the shed.

Kansas Department of Health and Environment
Division of Environment
Bureau of Waste Management
PHOTO MOUNTING SHEET

Name of Site: ChemSyn Laboratories **EPA ID #** KSD980966501

Location: 13605 W. 96th Street, Lenexa, Kansas 66215 **County:** Johnson

SWMU # 8

Picture # 11 **Date:** May 20, 1997 **Time:** 1:30 PM

Camera: Minolta Freedom II 35mm **Photographer:** Steve Swaffer

Comments: The photograph shows the six, 30-gallon drums of mixed waste that the facility has listed on their Part A application. Each drum is overpacked in a 55-gallons drum for secondary containment. These drums have been stored in the Hazardous Waste Storage Shed since 1992. The remainder of the shed is used as the less than 90 day storage area.

Kansas Department of Health and Environment
Division of Environment
Bureau of Waste Management
PHOTO MOUNTING SHEET

Name of Site: ChemSyn Laboratories **EPA ID #** KSD980966501

Location: 13605 W. 96th Street, Lenexa, Kansas 66215 **County:** Johnson

SWMU # 8

Picture # 12 **Date:** May 20, 1997 **Time:** 1:30 PM

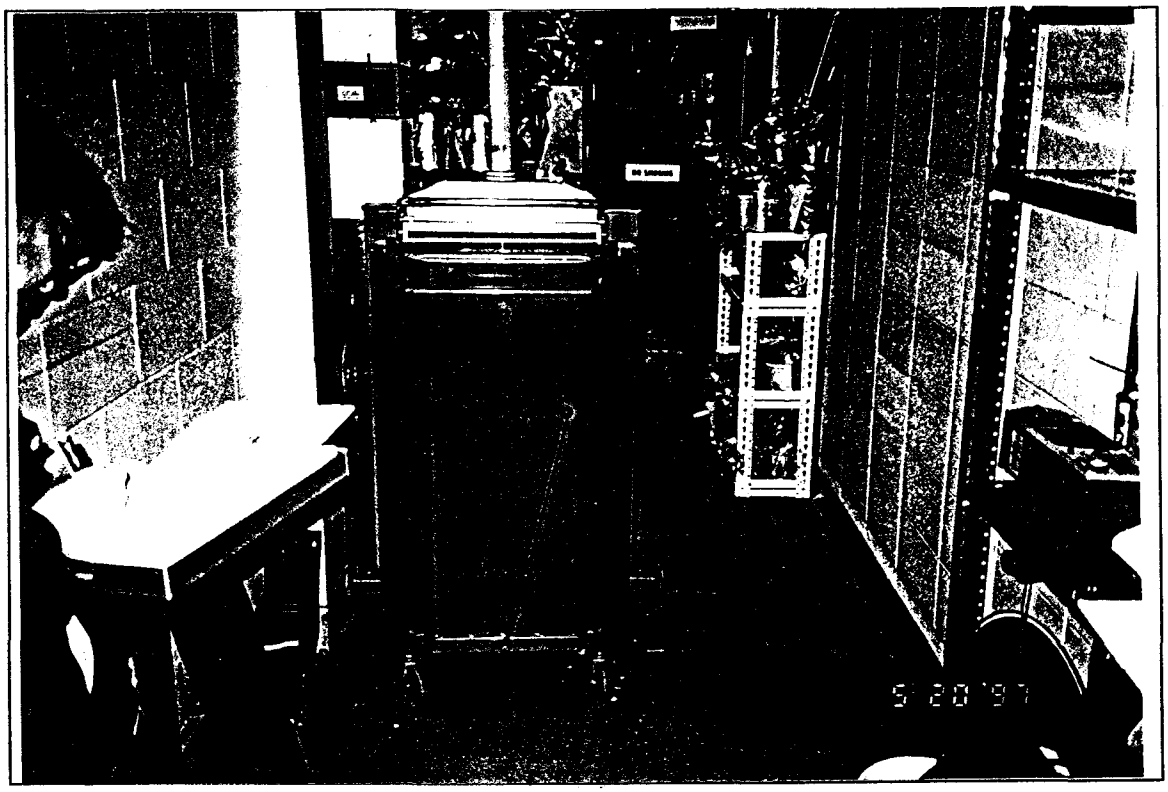
Camera: Minolta Freedom II 35mm **Photographer:** Steve Swaffer

Comments: The photograph shows four drums of waste in storage in Hazardous Waste Storage Shed. These drums are in the less than 90 day storage area awaiting transportation for disposal.

Kansas Department of Health and Environment
Division of Environment
Bureau of Waste Management
PHOTO MOUNTING SHEET

Name of Site: ChemSyn Laboratories **EPA ID #** KSD980966501

Location: 13605 W. 96th Street, Lenexa, Kansas 66215 **County:** Johnson



SWMU # 9

Picture # 13 **Date:** May 20, 1997 **Time:** 11:30 AM

Camera: Minolta Freedom II 35mm **Photographer:** Steve Swaffer

Comments: The photograph shows the Waste Compactor Area. Solid hazardous and radioactive wastes are compacted in this area before disposal.

Kansas Department of Health and Environment
Division of Environment
Bureau of Waste Management
PHOTO MOUNTING SHEET

Name of Site: ChemSyn Laboratories **EPA ID #** KSD980966501

Location: 13605 W. 96th Street, Lenexa, Kansas 66215 **County:** Johnson

SWMU # 10

Picture # 14 **Date:** May 20, 1997 **Time:** 11:30 AM

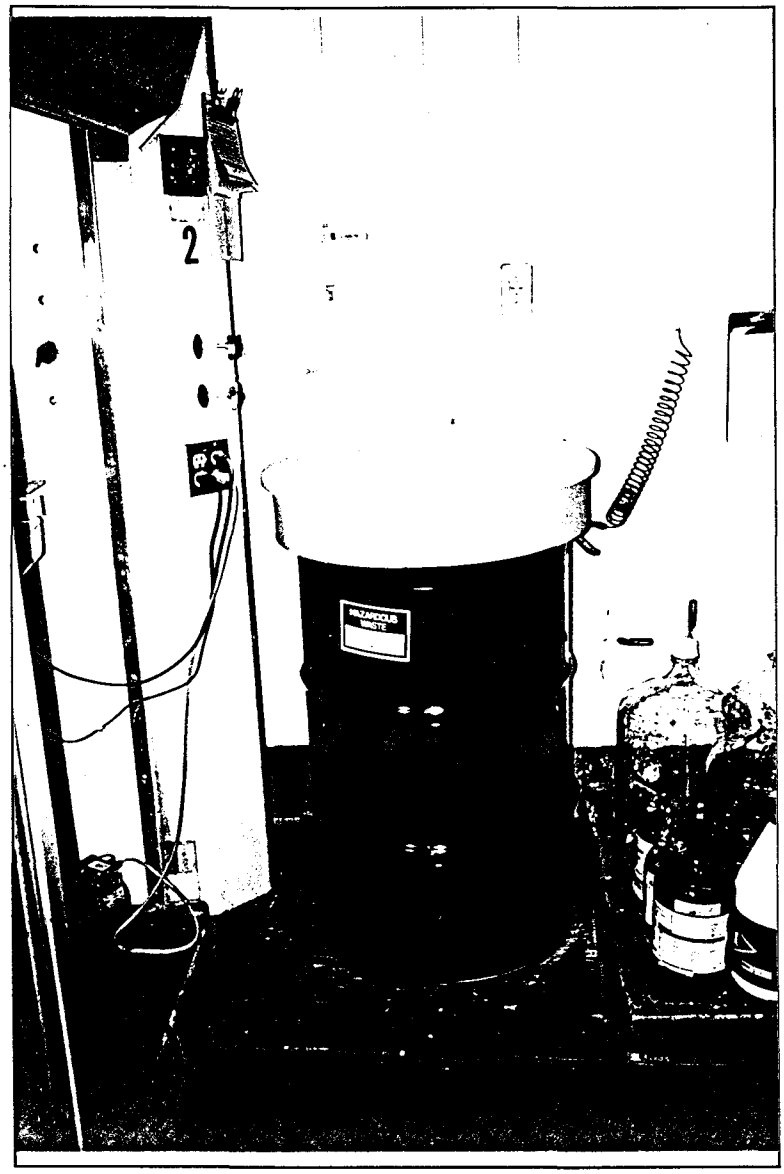
Camera: Minolta Freedom II 35mm **Photographer:** Steve Swaffer

Comments: The photograph shows one of the GMP Waste Solvent Barrels. The barrels are 55 gallons drums and are used alternately in the GMP Laboratory.

Kansas Department of Health and Environment
Division of Environment
Bureau of Waste Management
PHOTO MOUNTING SHEET

Name of Site: ChemSyn Laboratories **EPA ID #** KSD980966501

Location: 13605 W. 96th Street, Lenexa, Kansas 66215 **County:** Johnson



SWMU # 10

Picture # 15 **Date:** January 12, 1999 **Time:** 11:30 AM

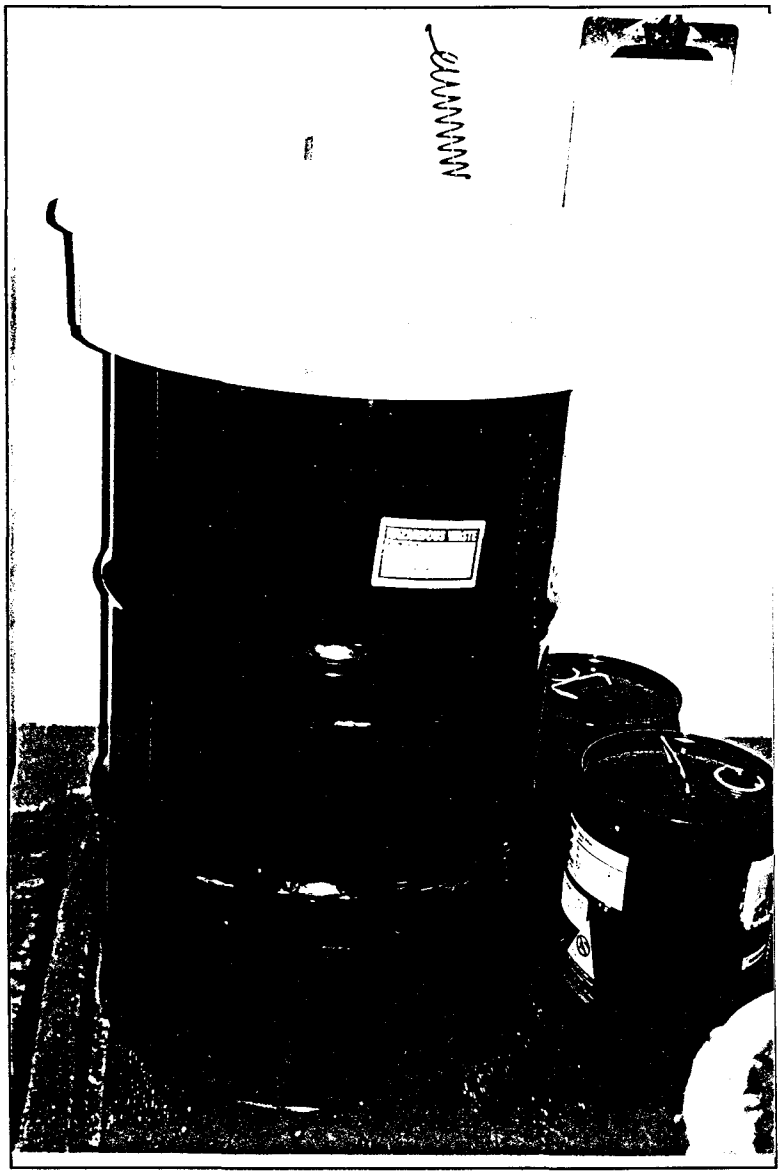
Camera: Minolta Freedom II 35mm **Photographer:** Kathy Bartlett

Comments: The photograph shows one of the GMP Waste Solvent Barrels. The barrels are 55 gallons drums and are used alternately in the GMP Laboratory.

Kansas Department of Health and Environment
Division of Environment
Bureau of Waste Management
PHOTO MOUNTING SHEET

Name of Site: ChemSyn Laboratories **EPA ID #** KSD980966501

Location: 13605 W. 96th Street, Lenexa, Kansas 66215 **County:** Johnson



SWMU # 10

Picture # 16 **Date:** January 12, 1999 **Time:** 11:30 AM

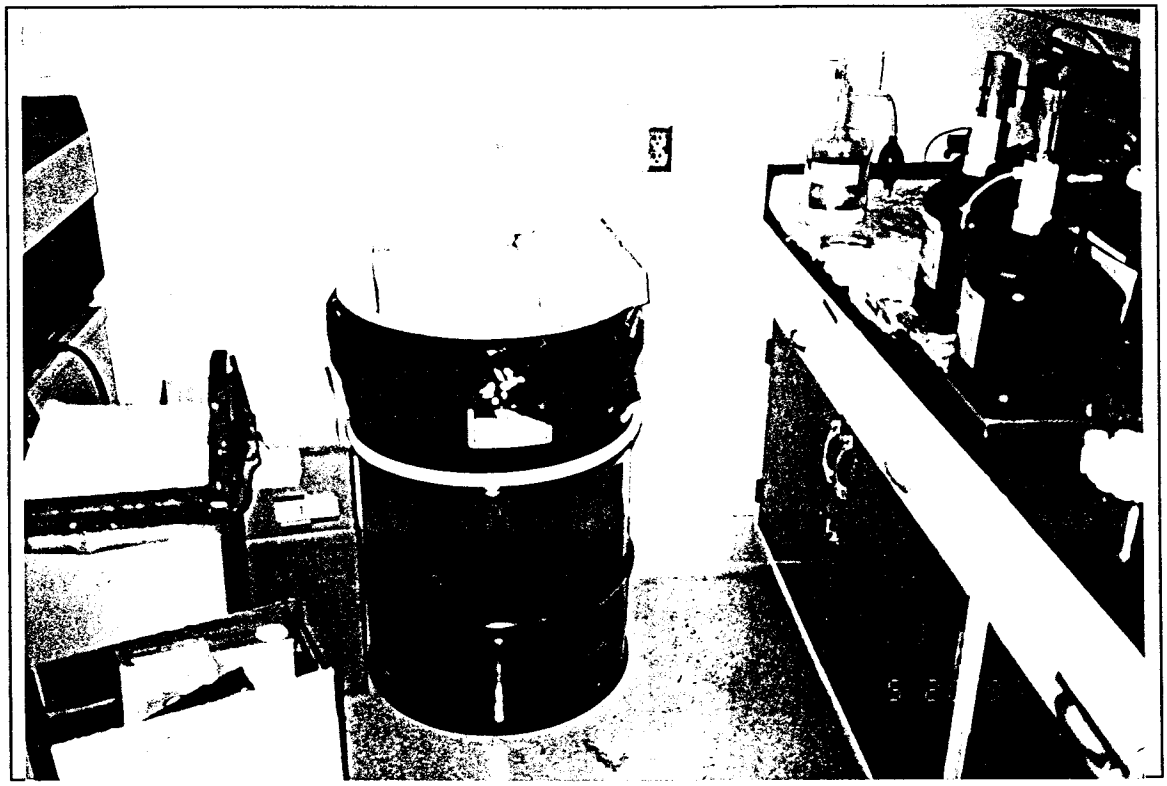
Camera: Minolta Freedom II 35mm **Photographer:** Kathy Bartlett

Comments: The photograph shows one of the GMP Waste Solvent Barrels. To the right of the barrel is the sheet that lab personnel maintain of the contents of the barrel.

Kansas Department of Health and Environment
Division of Environment
Bureau of Waste Management
PHOTO MOUNTING SHEET

Name of Site: ChemSyn Laboratories **EPA ID #** KSD980966501

Location: 13605 W. 96th Street, Lenexa, Kansas 66215 **County:** Johnson



SWMU # 11

Picture # 17 **Date:** May 20, 1997 **Time:** 11:30 AM

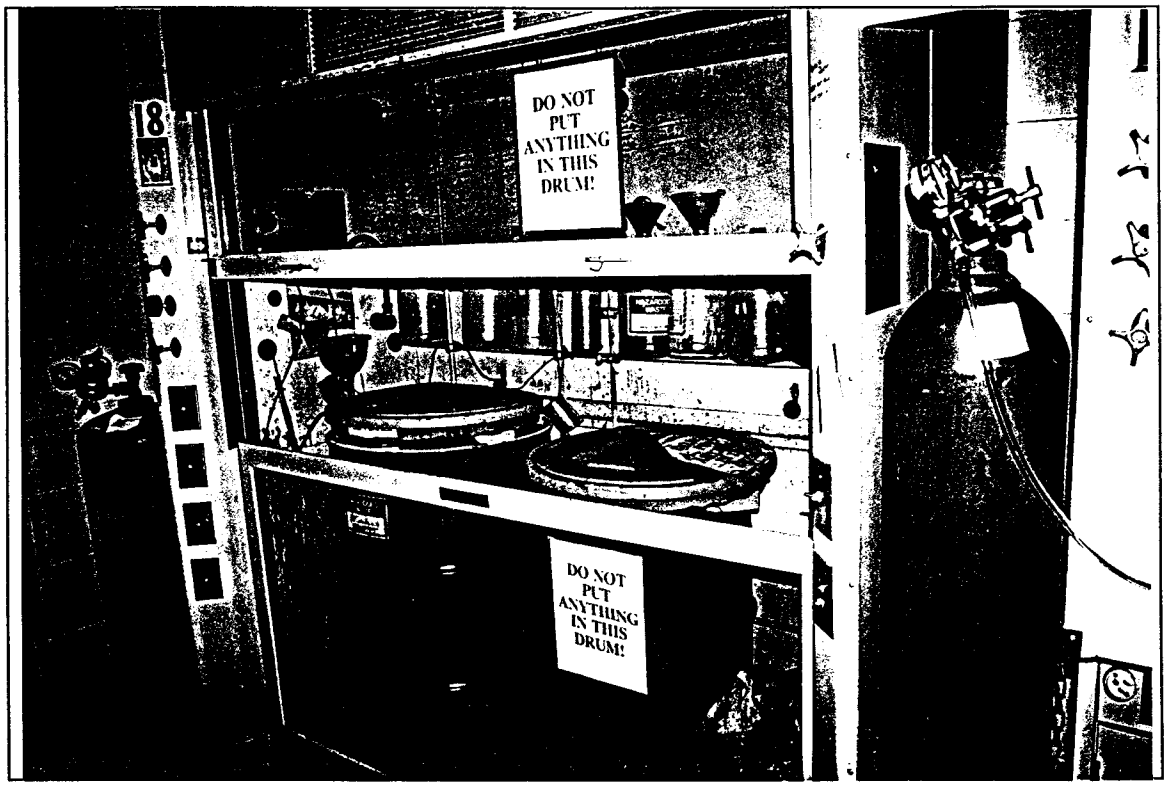
Camera: Minolta Freedom II 35mm **Photographer:** Steve Swaffer

Comments: The photograph shows the Scintillation Vial Waste Storage Barrel. This barrel is located in the instrumentation laboratory.

Kansas Department of Health and Environment
Division of Environment
Bureau of Waste Management
PHOTO MOUNTING SHEET

Name of Site: ChemSyn Laboratories **EPA ID #** KSD980966501

Location: 13605 W. 96th Street, Lenexa, Kansas 66215 **County:** Johnson



SWMU # 12

Picture # 18 **Date:** January 12, 1999 **Time:** 11:30 AM

Camera: Minolta Freedom II 35mm **Photographer:** Kathy Bartlett

Comments: The photograph shows the Waste Storage in Fume Hood. The 55-gallons drum on the left is for waste solvents and the 30-gallon drum on the right is used for waste chlorinated solvents.

Kansas Department of Health and Environment
Division of Environment
Bureau of Waste Management
PHOTO MOUNTING SHEET

Name of Site: ChemSyn Laboratories **EPA ID #** KSD980966501

Location: 13605 W. 96th Street, Lenexa, Kansas 66215 **County:** Johnson

AOC # 1

Picture # 19 **Date:** May 20, 1997 **Time:** 11:30 AM

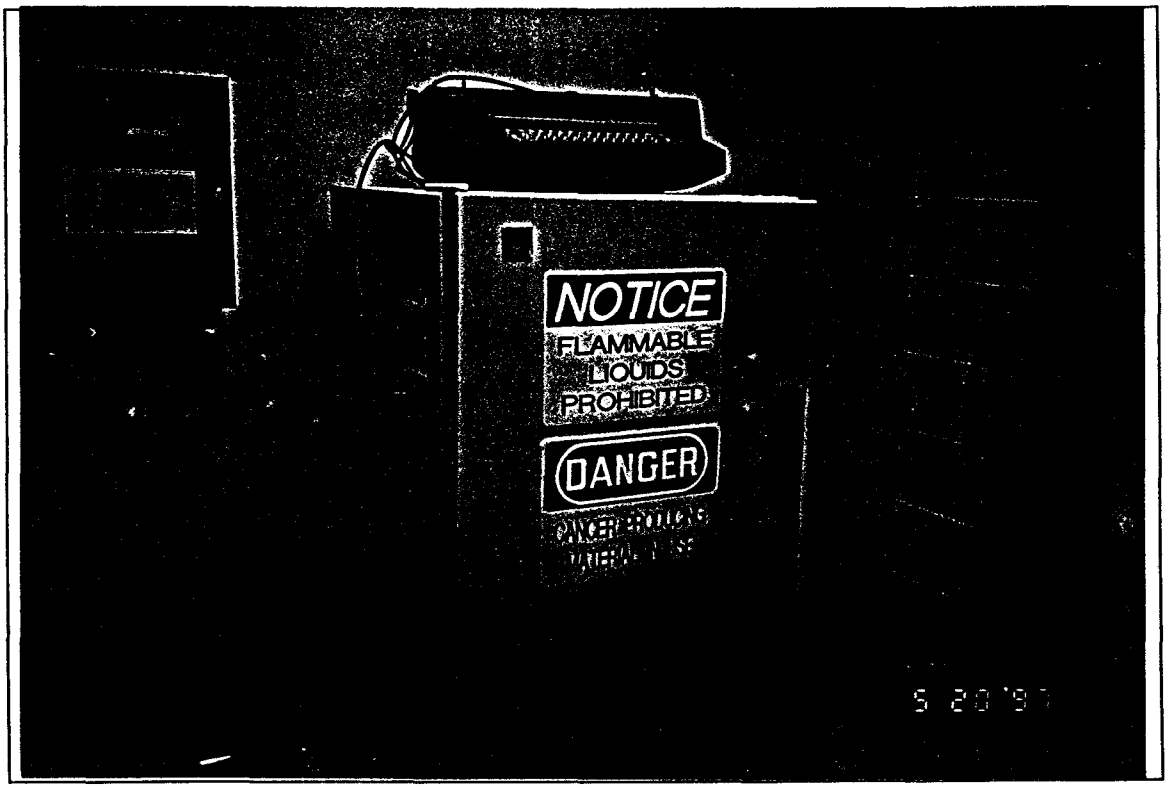
Camera: Minolta Freedom II 35mm **Photographer:** Steve Swaffer

Comments: The photograph shows the Quarantine/Release Area. This area is used for the storage of new chemicals. Each chemical is held in this area until the material is released for use under the guideline established in the facility's Quality Assurance/Quality Control (QA/QC) program.

Kansas Department of Health and Environment
Division of Environment
Bureau of Waste Management
PHOTO MOUNTING SHEET

Name of Site: ChemSyn Laboratories **EPA ID #** KSD980966501

Location: 13605 W. 96th Street, Lenexa, Kansas 66215 **County:** Johnson



AOC # 2

Picture # 20 **Date:** May 20, 1997 **Time:** 11:30 AM

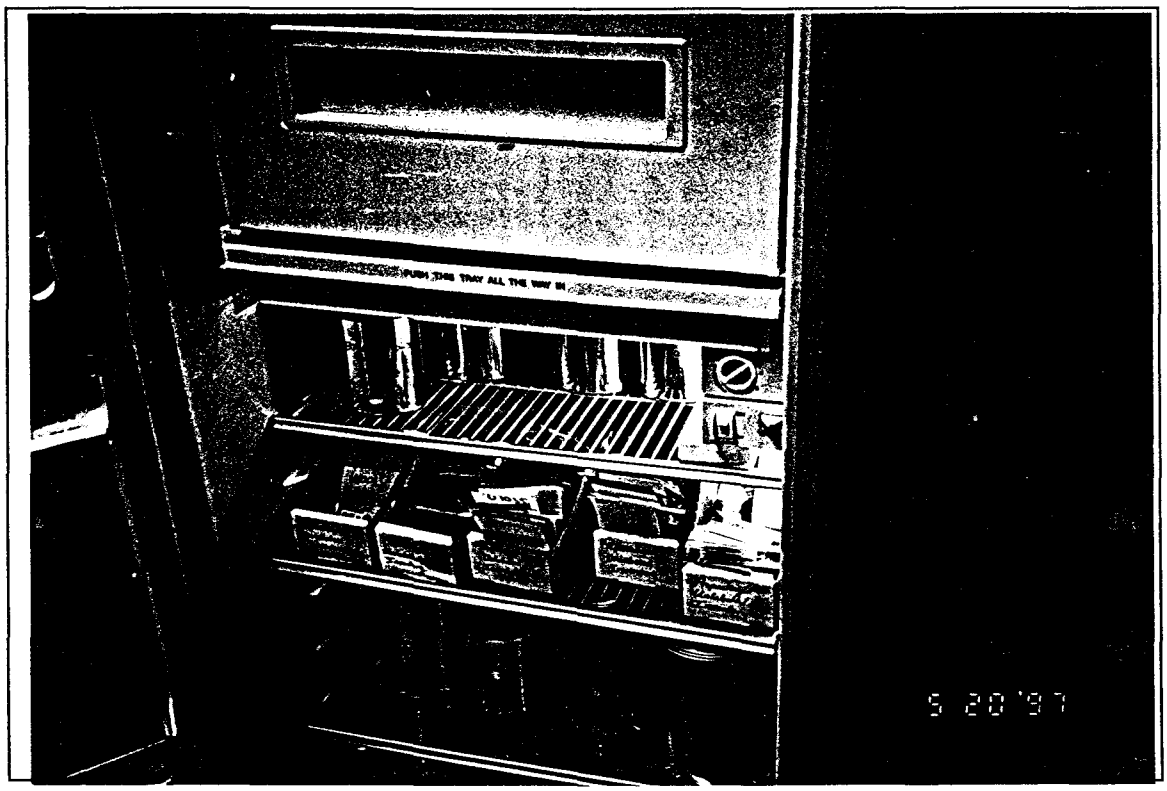
Camera: Minolta Freedom II 35mm **Photographer:** Steve Swaffer

Comments: The photograph shows the outside of the Catalog Materials Storage Refrigerator. The refrigerator is used for the storage of small quantity products.

Kansas Department of Health and Environment
Division of Environment
Bureau of Waste Management
PHOTO MOUNTING SHEET

Name of Site: ChemSyn Laboratories **EPA ID #** KSD980966501

Location: 13605 W. 96th Street, Lenexa, Kansas 66215 **County:** Johnson



AOC # 2

Picture # 21 **Date:** May 20, 1997 **Time:** 11:30 AM

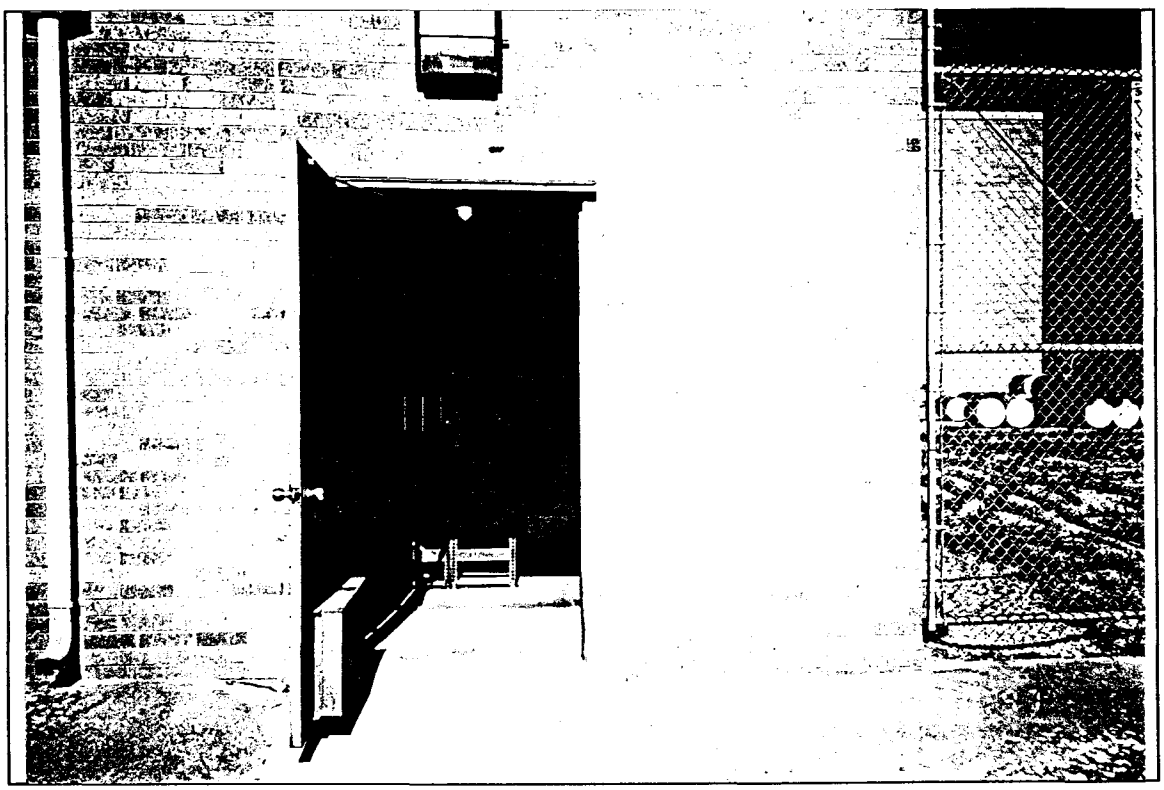
Camera: Minolta Freedom II 35mm **Photographer:** Steve Swaffer

Comments: The photograph shows the inside of the Catalog Materials Storage Refrigerator. The containers stored in the refrigerator range in size from one ounce to one gallon.

Kansas Department of Health and Environment
Division of Environment
Bureau of Waste Management
PHOTO MOUNTING SHEET

Name of Site: ChemSyn Laboratories **EPA ID #** KSD980966501

Location: 13605 W. 96th Street, Lenexa, Kansas 66215 **County:** Johnson



AOC # 3

Picture # 22 **Date:** May 20, 1997 **Time:** 1:30 PM

Camera: Minolta Freedom II 35mm **Photographer:** Steve Swaffer

Comments: The photograph shows the outside of the Solvent Storage Building. The building has a concrete slab floor and a concrete ramp for entry and exit.

Kansas Department of Health and Environment
Division of Environment
Bureau of Waste Management
PHOTO MOUNTING SHEET

Name of Site: ChemSyn Laboratories **EPA ID #** KSD980966501

Location: 13605 W. 96th Street, Lenexa, Kansas 66215 **County:** Johnson

AOC # 3

Picture # 23 **Date:** May 20, 1997 **Time:** 1:30 PM

Camera: Minolta Freedom II 35mm **Photographer:** Steve Swaffer

Comments: The photograph shows the inside of the Solvent Storage Building. The solvents are stored on metal shelves and wooden pallets.

Kansas Department of Health and Environment
Division of Environment
Bureau of Waste Management
PHOTO MOUNTING SHEET

Name of Site: ChemSyn Laboratories **EPA ID #** KSD980966501

Location: 13605 W. 96th Street, Lenexa, Kansas 66215 **County:** Johnson

AOC # 4

Picture # 24 **Date:** January 12, 1999 **Time:** 11:30 AM

Camera: Minolta Freedom II 35mm **Photographer:** Kathy Bartlett

Comments: The photograph shows the solid waste trash dumpster. This dumpster is located on the south side of the main building. All trash is checked for radiation before being placed in the dumpster.